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Editorial

In the second issue for 1952—Vol XXXVIII—the Editor wrote about the difficulties economical and otherwise of continuing publication of the Journal He also referred to the proposal for amalgamation with the R A M C and R A F Medical Service to publish a Combined Services Journal a scheme which was abandoned after a referendum of subscribers showed insufficient support The Journal continues in its present form representing the R N Medical and Dental Services and it is pleasing to report that the financial situation has not deteriorated It may not be appreciated that the Journal is read in many foreign countries and consequently it is the responsibility of every medical and dental officer to help to produce a publication worthy of the Service

A short book 'The Preparation and Writing of Medical Papers for Publication' by Dr W R Bett is reviewed in this issue It costs nothing and the publishers will send it post free on request It is well worth reading and we hope it will stimulate more and better contributions

We must congratulate our dental colleagues on the appointment of the first Surgeon Rear Admiral (D) The R N Dental Service was instituted in 1920 when the first dental assistant to the Medical Director General in that year held the rank of Surgeon Lieutenant (D) The steady rise in the rank of our senior dental appointment is worthy recognition of the valuable work of the R N Dental Officers

In the year 1753 George Cuthbert M D was appointed as the first medical officer in charge of the Royal Naval Hospital Haslar This year the bicentenary of this magnificent old hospital the home of all R N Medical and Dental Officers will be celebrated

An article appears in this number entitled Two Years in the Antarctic giving the experiences of Surgeon Lieutenant Dalgliesh It is of interest to note that the first article in the first volume of the Journal in January, 1915 recorded the experiences of Staff Surgeon (later Surgeon Commander) E L Atkinson R N who was a member of the Scott expedition 1910–13 Atkinson was one of the party who eventually found the remains of the gallant Captain Scott and his comrades and survived to continue service in the Navy until his retirement in November 1928

Articles

TWO YEARS IN THE ANTARCTIC[1]

BY

Surgeon Lieutenant D. G. DALGLIESH, R.N.

Who was a Member of the Falkland Islands Dependencies Survey from 1947 until 1950

Some people dream of exploring from the age when they are first old enough to think. I had never given it any really serious thought and came to do my bit of exploring almost by accident.

At the Admiralty I asked somewhat idly whether any expeditions went anywhere nowadays and was told, to my eternal surprise, "Yes, an expedition wanted a doctor to go to the Antarctic in fourteen days' time—would you like to go?" In spite of disliking cold weather I reckoned that I might possibly enjoy myself, but that I could not tell without going, so I agreed.

After only a fortnight's warning then I found myself in December 1947 on board the motor vessel *John Biscoe* at Tilbury, knowing no one on board, looking forward to I wasn't quite sure what, and leaving behind a wet English December and a good line in overdrafts.

I had spent the previous year in one of H.M. Cruisers leading a pleasant if not profitable existence and the change then to this *Biscoe* life was quite something. Although the ship's doctor I was also deck hand and was rather surprised to find myself scrubbing decks, peeling potatoes and doing lookout duties. In the tropics I was even painting ship.

By New Year's Eve we were in St. Vincent in the Cape Verde Islands and two weeks later Montevideo offered us our last chance of a run ashore in a large city. We accepted the offer.

Port Stanley in the Falkland Islands was our last link with civilization and we spent a whirl of hectic last minute shopping and equally hectic farewell parties. Leaving there we soon experienced the really bad weather we had been expecting since leaving England, for somehow it had seemed wrong to enjoy tropical weather when going to the Antarctic, but south of Cape Horn, in the Drake Passage we made up for it. The Forties had roared all right and now we understood why the whalers refer to the Furious Fifties and the Shrieking Sixties.

Six hundred miles south of Cape Horn the Captain showed me a lightness in the sky to the south and told me it was an ice blink, which is reflected sunlight on the clouds over distant ice or snow. Soon after we saw our first iceberg, which I now realize was quite small, but most of us then had never seen one before and this lovely sentinel of the South held us in awe. To my

[1]Reprinted by kind permission of the Editor, *St. Thomas's Hospital Gazette*.

[illegible] ice I knew [illegible] but delicate shades [illegible] in dazzling whiteness

In the late afternoon [illegible] fog bank ahead and then [illegible] appeared white patches in this fog and a little later to complicate matters I lick specks in this whiteness At last I understood here was the beginning of Antarctica This was Deception Island covered in its all too frequent mist This island is so called as it is no more than a rim of ice capped peaks with a natural harbour five miles across inside It is the tip of an old volcano whose rim has broken in one place to let the sea in but Deception is not quite dead for at low water there appear hot springs in the volcanic ash which forms the beach This black steaming beach contrasts oddly with the ice clad slopes behind

Here and at other places in the South Shetland and South Orkney Islands we stored the bases and exchanged their personnel

Then we struck due south and we now passed really large icebergs one being over 10 miles long We met increasing numbers of whales until they became an everyday sight

Again we saw an ice blink but this time we were not so pleased for it now indicated pack ice In winter the sea freezes (up to six feet thick in these latitudes) and in summer this usually breaks up by the action of wind and sun to form pack ice These pans or floes of ice vary in size from a few square feet to areas larger than football pitches Amongst them our progress was naturally slowed and the *Biscoe* which was not then sheathed in greenheart came out of the field of pack ice with four inches of wood shorn off her shoulders *John Biscoe* 1 000 tons all wooden ship was originally built as a boom defence vessel She did not break ice but pushed it aside One advantage of the pack was that it damped down the sea and one no longer heaved and rolled

Now well inside the Antarctic Circle Fate smiled on us We crossed a glassy sea towards this land of rock and ice that would be our home for the next two years But it was not the black and white scene we had imagined Instead great mountain peaks and glaciers rose steeply from the sea in breath taking majesty unbelievably tinted in delicate pinks yellows and blues. Surmounting all was the 6 000 feet ice capped plateau of Graham Land, we anchored and the engines ceased Then I experienced for the first time some thing I never quite got used to—an almost tangible silence that prevails down there when there is no wind and which seems so incongruous among such massive scenery

Eleven of us were left behind when the *Biscoe* sailed in the early morning None of us slept her go we were sleeping too soundly after unloading 60 tons of stores in four hours During that night just before falling to sleep I was startled by a ghostly wail that rose to a mournful crescendo then fell to rise again I was reassured that this was only the huskies howling to the moon and it was not long before I came to love this sound The dogs would only howl when they were happy

Our home was a double walled wooden hut with a layer of aluminium foil between these walls to reflect the cold out and the heat in Our bunks lined

[redacted] I shall a partition off and was the [redacted] with [redacted] store. [redacted] to the living room was a workshop wireless room [redacted] room, dark room bath room store hut laboratory and green house.

Our mode of life at hut was really very civilized. All of us except the leader took the job of cook for a month in strict rotation but cooking was not a popular job. It tied you down. It was never ending and anyhow none of us really liked cooking. In spite of this, the standard achieved was remarkably high. We all started from scratch but we soon learnt that it was not difficult if you carried out the instructions in the cookery book or on the tin to the letter. Each of us had to learn that the writer of the cookery book knew more about his job than we did. It was a hard job because you had to prepare four main meals a day for 10 other very hungry men who could be quite outspoken in their criticisms. Each meal was of at least two courses and for tea fresh cakes buns or pastries were expected every day. On top of this it was necessary to bake between 30 to 50 lb. of bread per week. My claim to cooking fame was to be the first to make genuine hot cross buns.

Our food of course was almost entirely tinned or dried and although there was a good variety we were all heartily sick of preserved food long before the end of the second year.

Two men had the 'gash' duties each day. They had to wash up after meals, empty the gash buckets, bring in coal for the fires and replenish the hundred gallon tank beside the stove with ice or snow which slowly melted and formed our main water supply. It was paradoxical that among all that snow and ice water was a scarce commodity owing to the fuel needed to melt it. In the evening the 'gash men' had to feed the dogs.

On our bunks we had comfortable mattresses, blankets, sheets and pillow slips. This business of sheets and for that matter an Esse stove may sound extraordinary luxuries but our contention was and is that any fool can make discomforts and that if we were going to live there for one or even two years we might as well be comfortable and enjoy properly cooked food.

We had a small bathroom with one of those shallow baths with a high back which I had only seen before in drawings. We had a petrol drum built on to a brick fireplace as our hot water supply and tubs of snow as the cold supply. Every eleventh day was our bath night and the following day you did your own dhobi work including of course your pillow cases and sheets. The tank and tubs were then topped up, the deck scrubbed, the fire stoked and you handed over to the next man. My results as a washerwoman were not, I suppose, first class but what the soap and water failed to remove could be bleached by the sun when the summer came for to us time was a meaningless thing. Seldom did you know the day of the week. If for some reason you wanted to know you asked the cook—he alone counted his days very carefully.

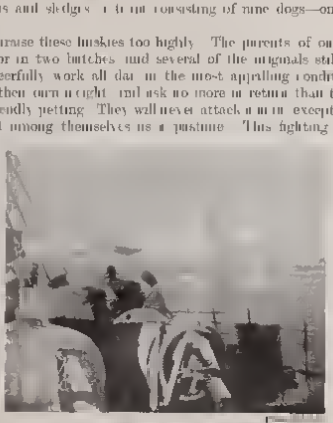
Just because you can get used to anything the cold was not an overbearing hardship. The temperature in the hut was never more than a few degrees above freezing during the day and always below freezing during the night. The deck of course was the coldest place and things would freeze to it. I

[illegible] slipped my feet out [illegible] and fell flat [illegible] I frozen to the floor [illegible]

[illegible] the depth of the year the [illegible] would take their readings in [illegible] These observations were sent to Port Stanley by wireless [illegible] at set times and were used to form forecasts from the Falkland [illegible] the South Atlantic

At base the [illegible] occupation was sealing Seals were the main source of fresh [illegible] which we had very [illegible] We also ate some seal meat ourselves [illegible] was universally disliked the only parts we did enjoy being the liver while heart which were excellent and not a bit fishy The seals—Weddels mostly were not too hard to kill as they did not know what we were because they usually have no enemies out of water We would find them lying on the sea ice by their blow holes having a gentle snooze after a good feed of fish and once merely had to bash them over the head with a club This killing was an unpleasant but unfortunately most necessary task The more we killed the further we had to travel to find them and finally in our second year we were doing round trips of 30 miles Each seal weighed an average of 500lb being anything up to 12 feet long and therefore two was the maximum one could haul on a sledge To transport them we would use our dog teams and sledges a team consisting of nine dogs—one leader and four pairs

I cannot praise these huskies too highly The parents of ours had come from Labrador in two batches and several of the originals still ran for us They will cheerfully work all day in the most appalling conditions pulling nearly twice their own weight and ask no more in return than to be fed and [illegible] some friendly petting They will never attack a man except by accident, but will fight among themselves as a pastime This fighting can be very



[illegible]

Photo F.T.H.S.

Base I during September 1914 showing the "Greenhouse"

F. & J. H.D.S.

The author sledging from Base I

serious, even fatal, and for some reason the bitches are far more vicious to one another than the dogs. Many teams have a king dog who maintains his position as boss by periodically beating up every other dog in the team. Shortly after I arrived, I was given six dogs and three bitches, told it was my team and to get on and train them as such. Having spent many weary hours sewing up dogs from already trained teams, I decided that the only thing dog

[illegible] After a prodigious expenditure [illegible] I [illegible] on—an excellent team with [illegible] blacks and I will [illegible] I was madly fond But to confound the experts who maintain that you must have a king dog I can honestly say that my team was the second strongest we had and that only once in two years did I have to stitch one of them up (and that understandably being the result of one of those triangular love affairs)

A team is controlled by word of mouth and although one carry a 35 foot whip this is primarily for directing the dogs i.e. that one away from the side on which you crack it You must never get cross when you are wielding one of these ferocious leather weapons I was never much good at this whip technique and once when rapidly losing patience for the dogs were being particularly stubborn I finished up by lashing myself across the face and breaking the skin from one side to the other After that I relied more on my sharp tongue—it was less painful

I was of course the veterinary surgeon and for the benefit of those who do not know a dog's normal temperature is 101° F a fact I had to discover the hard way

On the whole the weather was predominantly bad Our lowest temperatures were in the minus forties But rather than the intense cold the most unpleasant conditions were the blizzards From base we would look up to the plateau and see snow plumes from the peaks which was a sure sign of an impending blizzard These would blow continuously with a velocity between 60 and 100 knots for anything up to fourteen days During such periods at base there was little one could do outside and jobs like sledge repairing harness making and darning one's clothes were resorted to Many were the times we would have a regular sewing bee round the fire Naturally some jobs had to be done outside no matter how bad the weather The gash had to be emptied and the dogs fed The latter job was very tiring under these circumstances and often necessitated crawling on one's hands and knees since standing was impossible During these blizzards the snow is not the gentle flakes we know in this country but a driving stream of fine powdery snow that has an effect like a sand blaster The final result is good however as it leaves a hard packed surface that is barely marked by your feet When the fine days do come and there is no wind and perhaps the sun is shining the beauty and magnificence are so incredible that one such day makes up for many foul ones

The objects of the Falkland Island Dependencies Survey were for us, the meteorological observations and a geographical geological and biological survey of the West Graham Land coast To carry this out we made long journeys up and down the coast of Marguerite Bay from our base which was in the middle of this bay The base was on a small island three quarters of a mile long and covered on its eastern side by a glacier which gave access to the Graham Land plateau The larger part of the surveying of this had been done in the two years previous to my arrival under the original leadership of Surgeon Commander E W Bingham R N He, incidentally is undoubtedly

[illegible] report on Polar matters in this country. The [illegible] until the original establishment of most [illegible] the Expedition was primarily due to his genius.

[illegible] long and detailed preparations were [illegible]. All the equipment had to be checked minutely and weighed to the [illegible] pound. The equipment would include tent, sleeping bags, cooking utensils, sledge traces, harnesses, skis, snowshoes, etc. The surveyors would prepare their charts and check their theodolites; the geologists their hammers, bags and labels. (I speak feelingly on this last point as a friend and I collected rock specimens on a journey and to us, before then, all rocks were just rocks or the pink and white variety.)

Practically all our travelling was done on the sea ice as we were doing a coastal survey. We became so used to living, eating and sleeping on the sea ice that we would refer to it as the ground and forget that there were a few hundred fathoms of water beneath us, that is, until a sledge went through.

The day would eventually come, after all these preparations when you were ready to leave. With a cry to your dogs, away you would go like hats out of hell. The dogs would be galloping and barking, so pleased to be on the move. For the first mile or so you would ride on the back of your sledge. Then when the first mad rush was over, you would halt your team and put on your skis and travel beside your sledge at the rear, so that you could manoeuvre it. One's clothing varied with the individual. We all wore a string vest next to our skin. This was to absorb sweat, which it did most effectively. The only one time in my two years when I was really cold, so cold that I was stupid and light headed, was when I had worn *too much* clothing, so that my sweat froze all over me when I stopped moving. Over this vest I wore a woolly vest, a khaki shirt, a seaman's jersey and an anorak. This is a voluminous windproof garment with large sleeves and a fur edged hood. On my lower half I favoured sanity pants, pyjama trousers, khaki battledress trousers and windproof trousers. On my feet two or three pairs of graded socks, one pair of three pairs of duffle slippers and a felt boot and moccasin for very cold weather, or sealskins without the felt boot in not such cold weather. Sealskin boots are made by the Esquimaux in the North and if you can get your wife chews them for you each morning. We had no wives so before a journey we soaked them in water until they were soft and pliable. Then just before going outside you put them on so that they freeze to the shape of your foot. They are amazingly comfortable so long as you remember not to stand on the edge of a sledge during those first few minutes. On my hands I wore two or three pairs of duffle mitt gloves and a leather outer glove. These were invariably worn on a glove harness round the neck. It was often necessary to remove your gloves for example when harnessing dogs, blowing your nose or lighting a cigarette and the gloves were too important to risk losing by putting them down anywhere. On my head I wore a woollen hat covering my ears. The windproofs although thin and light were absolutely first class. You could stand in a howling blizzard and remain quite warm.

The Nansen sledges we used were wonders of construction. Twelve feet

being light by [illegible] supple and their [illegible] stances The loads consisted mainly of [illegible] type being made up in [illegible] with [illegible] ... ration for each day (Pemmican is a very highly [illegible] ... ing and is made up in cakes of 1 lb each These rations were designed so that [illegible] ... ch consisted of porridge with [illegible] ... Lunch was three [illegible] ... cocoa in Thermos flasks and [illegible] ... pemmican butter and [illegible] ... All rather monotonous but most sustaining An interesting fact is our calorific intake Men were 7 lb for two of us seven days and we would often [illegible] ... lump of this frozen butter by itself a fact that would make most people sick here at home

Our tents that I have spent most [illegible] ... Measuring 6 feet by 6 feet they were pyramidal with four poles They really consisted of two tents one inside the other The outer had a skirt which was covered in blocks of snow to stop the wind getting underneath and blowing it away and the inner had an inward facing skirt over which was put the rubber ground sheet On this went a reindeer skin for insulation then I was strip between the double eiderdown sleeping bag Of course we slept almost fully clad with head and shoulders inside and it was possible to zip up the bags to form chin but I like several of us found this too claustrophobic As a result I had my nose frost bitten several times Being a restless sleeper I would awake during the night to find that I had pushed my face out and my nose felt like the Eddystone Lighthouse One of the greatest tests of courage was waking in the morning when the alarm went off (most necessary as we slept so soundly) and making oneself push head and shoulders out of the bag into the freezing atmosphere to grope for the matches and candle Everything including the wall of the tent would be covered in frost After the methylated spluttered and finally lit the primus the tent soon warmed up Below the level of the flame the tent walls remained covered in ice but in the pork our clothing hung up to dry would be so hot we could barely touch it The entrance to the tent was a double sleeve through which we crawled and which we could tie up tight to prevent drift snow coming in

Travelling for weeks by sledge and living in tents sounds rather uncomfortable But we soon took it as a matter of course and appreciated the comforts we had When blizzards prevented travelling and this was on an average of one day in three we were forced to lie up Then time did hang heavily The number of books we had was limited by weight and the fuel we could have the primus running was limited by the available paraffin again a question of weight Mostly we would lie in our bags sleeping or talking sometimes playing cards and sometimes battleships On these occasions the dogs would curl themselves up tight as they did in fine weather when it was necessary to haul out of your bag and the tent perhaps in your turn feel and administer a little elementary justice with a ski stick Instead they

would be curled up in the snow with their furry bushy tails covering their noses and mouths

A remarkable number of people have asked me (behind the back of their hands) how we answered the calls of nature under these conditions Well in the same manner and with even greater nonchalance than one would need say on a camping holiday in this country

Distances travelled varied with the weather surfaces and loads A good average was 10 miles a day I have done as much as 24 and as little as 2 On a bad surface such as deep soft snow you have to keep driving the dogs and push the sledge as well By the end of the day you may have done only three or four miles or less then you and the dogs are utterly exhausted and almost too tired to eat your evening meal On a good day if you are lucky with the sno shining sun just hang on to your tow rope and the sledge as the dogs skim you along the sledge runners and your skis making a soft swish over the hard packed snow Around you tower the beautiful mountains and glaciers and the dogs indicate their happiness by holding their tails up like fine nodding plumes To me such days will remain among the most perfect of my life

On the homeward run to base the dogs always knew that they were heading for rest and plentiful seal meat and would pull correspondingly harder even though they were in virgin country The oldest dog in my team called Nanu knew whenever we were within even 40 miles of base and would sit and quietly sing whenever we halted The driver of another team one day had to keep correcting his lead dog on to the proper course He noticed that the dog was endeavouring to run on one fixed but incorrect course Therefore he took the bearing of the dog s course That evening he plotted this on his map and found that it was a direct line to base However base was 100 miles away on the other side of a monotonous headland !

Arriving back at base after a long journey was always a great occasion The cook would put on special food which we all dug into But no matter how keen we were to eat all this tasty food we never did justice to his efforts for our stomachs had become too accustomed to small concentrated meals After the meal the bathroom with lashings of water was at our disposal and although we could notice nothing wrong ourselves we always suspected that we must have smelt rather high judging by the alacrity with which the bathroom was offered us

During most of the year we would grow beards These were not only a protection against the cold but also an amusing pastime Haircuts and beard trims were also indulged in so that by the time we had had our baths and put on clean clothes we felt almost human again That evening we would have a party A bottle of gin or whisky was brought out and carefully shared We only had enough spirits for one bottle among the 11 of us each week Other party occasions were birthdays Then a large (10 lb) cake would be made and decorated with icing some of it coloured with beetroot juice

For three months in the winter there was no sun and for about six months there was no life other than an occasional seal and ourselves However, in the

spring the birds would return—gulls skuas, giant petrels snowy petrels, Antarctic terns and sometimes a blue-eyed shag Later the penguins would arrive for breeding There are only two varieties so far south the small black and white Adelie and the large and very rare Emperor The Adelies travel up to 60 miles across the sea ice tobogganing on their tummies to reach their rookeries There they congregate in several thousands in a very restricted area which at the season had a very characteristic noise and smell They build nests of stones and lay two eggs These are all laid within two or three days and we would watch our nearest rookery—eight miles away—until the second egg was laid Then much to their indignation we punched the fresh egg taking about 400 in all They would then lay another to replace the lost one—so again having two—and we were both satisfied These eggs were a wonderful addition to our larder being one of the few sources of fresh food They have a very tenacious white ' which remains transparent when cooked and for this reason we fried them on both sides They made wonderful omelettes and scrambled well

Another source of fresh food was fish They were very small and of a kind peculiar to those regions but very tasty To catch them we would sit over a crack or a hole in the sea ice with a line baited with seal meat They were very easy to catch and for a long time I used a hook with no barb—it was easier to remove But each man needed four or five to make a meal and the necessary gutting filleting and cooking made our fish fries rather infrequent

In the summer too with twenty four hours of sunlight the greenhouse came into its own The original idea to have one came from Surgeon Commander E W Bingham R N The greenhouse—one of my jobs—measured 6 feet by 4 feet and had double glass In soil that was brought from the Falkland Islands I grew radishes spring onions carrots and savoys (no hearts) and violas lunaria and weeds The radishes were the most successful item and were distributed so many per man the tops being boiled and eaten like spinach Although the soil had been subjected to temperatures below minus 40° it contained seeds of weeds which germinated when the soil was thawed I felt they deserved to survive and so put my grounsel bindweed, shepherd's purse and chickweed into special boxes and then had to 'weed the weeds '

By the end of January the sea ice should have shown signs of breaking But even from a 3 000 foot peak there was no sign of open sea The days were on with no signs of a break until finally we had to admit what we had suspected for quite a while that the ice was not going to break and therefore the *Biscoe* could not get in to relieve us In fact she was unable to get nearer than 350 miles away the intervening space being solid with pack ice and unbroken sea ice

Naturally it was a great disappointment for those of us expecting to go home to find that return was going to be delayed a whole year But we realized that there was no alternative and at once made plans for work to be done in the coming year In fact our leader had thought out most of them already

[illegible] I had an [illegible] task with two other men This was [illegible] [illegible], the previous year we had discovered a small [illegible] [illegible] [illegible] [illegible] only the third rookery known to man They [illegible] [illegible] [illegible] [illegible] from the open water They breed in the winter [illegible] [illegible] [illegible] [illegible] travel [illegible] with the pack ice when it breaks in the summer Because of their unity and the fact that they breed in winter no one had ever observed their breeding habits or and more important obtained their early embryos The discovery of this rookery was an intriguing find and of great biological interest These birds stand between 3 and 4 feet high have [illegible] grey backs lemon yellow fronts black heads bright orange auricular patches and red lower beaks How strange it was to find such colourful birds among the snow They are rightly named Emperors possessing a natural grace and dignity When we first approached them two 'sentries' stood in front of the rookery and blocked our path They obviously thought we were larger penguins for they greeted us with weird squawks and graceful bows To have ignored such behaviour would have been nothing short of ill mannered and we could not help but doff our hats and bow in return On that first visit we took no specimens but treated them with the respect they so obviously expected That had been our intention, but on leaving them our leading sledge broke through some rotten ice and in the ensuing melée two dogs broke loose and killed an inoffensive bird who happened to be standing by Before leaving I removed his head and have since had it mounted After this mishap we had to sleep in soaking sleeping bags for four days and although no actual colds developed we all had the early tickle in our throats normally associated with the beginning of a cold

At the end of May then, after the sun had gone a party of us set off for this rookery Three of us were established in a three man tent in a static camp This one small island 200 yards long and 100 yards wide was now the home of 200 Emperor penguins 18 dogs and 3 men Here we lived for over seventy days We had frequent chats with base 52 miles away on our small wireless This we housed in an igloo—our first attempt at this form of construction We obtained a good series of embryos which we preserved We spent a vast majority of the time in our tent sleeping eating reading and talking The weather of course was foul Periodically it was necessary to dig out the tent when the weight of the snow threatened to break the tent poles Some time was spent sealing and for most of our stay the dogs had seal meat instead of pemmican Each seal caught meant a long session of hard work cutting it up while it was still warm We had only knives and axes which were useless once the beast was really frozen At base the only possible way to cut up seals in winter was with a large two man cross cut saw A felling axe most effective in warmer weather would bounce and break if used in winter

Eighty four days after leaving we arrived back at base complete with two adults and one chick penguin long beards longer hair and eight[illegible] four days overdue for a wash The penguins had travelled in a cage we had constructed on a sledge out at the rookery One adult and the chick survived and we tended them carefully for six months We fed them on fish which we had to catch

[illegible] We [illegible] fish and supplemented [illegible] with herrings in which they appeared [illegible] in thin wedges. After [illegible] time and hard work the two surviving birds were flown home to [illegible] and we were very disappointed that the London Zoo failed to keep them alive for longer than a fortnight. They were the first Emperor penguins ever sent to England.

On an expedition or survey of this sort you cannot have just one job. You must be prepared to do anything. My official jobs were doctor, dentist, meteorology surgeon, carpenter, photographer, gardener and dog driver. Other activities included amateur geologist, rock steeplejack, and even hair cutting.

My doctoring was not confined to the 11 of us at our base. My practice included the other six bases, the farthest of which was 700 miles away. Consultations, diagnosis and treatment were carried out by radio—not an easy job. Usually it was not possible to talk direct and morse had to be used. Added to this it was usually necessary to give an anatomy lesson. When I asked one man to find the point of maximum tenderness on an ankle (suspected Potts) he informed me this was on the ankle bone. When I said, 'Yes, but which bone is that?' he replied, 'Surely *you* know which is the ankle bone!'

My most severe case was a man who was thrown off a fast moving sledge on to the sea ice and in whom (250 miles away) I diagnosed a ruptured kidney. After three days of suppression of urine his kidneys started functioning again with the aid of strong coffee and soda bic. The additional complication in this case was that the wounded man was the wireless operator of that base and the only man capable of working the wireless.

Except in emergencies any frost bite or snow blindness was entirely the man's own fault. There was one fairly severe case of frost bitten toes due to the man wearing the wrong sort of boots for the temperatures at that time. Another of frost bitten fingers was due to the man working his theodolite with bare hands in a temperature of minus 40 degrees. There was only one case of snow blindness due to the man not wearing his goggles. The dangerous times for snow blindness are the overcast days when you cannot actually see the sun, but fail to realize that its rays are still getting through the clouds and moreover are being reflected upwards by the snow. This latter fact makes goggles rather than glasses essential.

Health on the whole was excellent. No one ever had a cough or a cold. The greatest amount of medical work at our base was caused by teeth. There is a certain amount of argument as to the causative factor but my own idea is that the constant changes in temperature brought about when one is travelling in cold weather caused cracking of the tooth substance beside the fillings. The difference in coefficient of expansion between teeth and amalgam must be quite marked. Imagine travelling in temperatures around minus 40 and shouting at your dogs perhaps when running, pushing or just skiing. The temperature difference with each breath is then at least 140° F. Anyhow whatever the cause I had to give every member of our base at least two temporary stoppings by the end of two years. Four or five had as many as six fillings. Two men had theirs done in a tent by candlelight. There were also

a number of extractions which I did under blocks The success of my dentistry was wholly due to the excellent instruction I received from the Tuothy in my last ship in the week before I left

I am often asked Weren t you fed up with one another after two years, and only too glad to get away from one another ? Well the remarkable thing is that far from being fed up we immediately felt rather lost if we were alone once we had left the south From the moment I joined the *Biscoe* I noticed in myself and in everyone else an amazing tolerance We automatically realized that we had to put up with one another so we had better get on with it I hardly recognized myself at times putting up with things that previously would have driven me to screaming point We certainly were not saints thank God but we had a magnificent leader Dr V E Fuchs and we all had an Englishman s outlook on life Everyone would occasionally blow his top and he allowed to do so But we were all agreed that the one man who could be temperamental was the cook

Finally in January 1950 we were relieved The five men who had been down there for three years were flown out The rest of us waited for the ship In February one calm clear evening a group of us watching from the top of the glacier slope saw the masthead lights and upperworks of the *Biscoe* miraged in the sky Below this moving spot that held our gaze was clear sky and the horizon This form of mirage was common in clear weather and we would sometimes see icebergs miraged even three times above the horizon The *Biscoe* brought us fresh food and beer and also our mail This mail we had been impatient to have for so long but what an anticlimax it was You cannot be enthusiastic over letters and their news that are two years out of date

Arriving in civilization again was of course wonderful but it was also bewildering I had lost the power of small talk and chit chat and I think we all seemed rather dumb to the people we met I had also lost all sense of the value of money and only recovered this sense rather late (But what a party while it lasted)

I shall never regret going on what was the experience of a lifetime What I gained is invaluable and what I lost of small consequence For anyone who wonders what I got out of it let me say that if it was not for the necessity of earning my living I would be back there now You meet magnificent men you experience the best in them and you see a part of the world whose bounty and ferocity defy adequate description but which exerts a most powerful and fascinating attraction

CLASSIFIED MEDICAL REFERENCES IN THE WORKS OF SHAKESPEARE

BY

Surgeon Commander J W L CROSFILL, R N

PART III

Cæsarean Section

Roman law authorized the removal of a fœtus from the womb of a deceased mother (hence the name Posthumus quotation 291) Julius Cæsar is reputed to have been so born by some dictionaries but the fact that his mother did not die at his birth disproves this belief, neither does Plutarch mention any such circumstance Possibly the fact that Julius Cæsar suffered from deafness the falling sickness (which might have been epileptiform or perhaps Ménière's syndrome) and fevers made him sympathetic to things medical as he did much to improve the status of practitioners in Rome, who at that time were slaves menials or Grecian wanderers by admitting them to Roman citizenship in 46 B C

291 *Mother* Lucina leot me not her aid
But took me in my throes
That from me was Posthumus ripp'd —*Cymbeline* v 4

292 *Macduff* Macduff was from his mother's womb
Untimely ripp'd —*Macbeth* v 8

293 *Bastard* ripping up the womb
Of your dear mother England —*King John* v 2.

Canker

294 *Coriolanus* I will fight
Against my canker'd country with the spleen
Of all the under fiends —*Coriolanus* iv 5

(Canker is used in the sense of inveterate corrosion Spleen is here indicative of extreme violence of passion)

Cannabis Indica

295 *Sir Toby* How now my metal of India!—*Twelfth Night* ii 5

(Metal of India would be gold in which case the meaning of the whole would be rendered in modern terms as How now my precious!)
(Metal is the word given in the first folio edition of Shakespeare 1623 It has been suggested That metal was a corruption in transcription of nettle in which case nettle of India would mean Cannabis indica It is, in use in Elizabethan times a narcotic poison This latter rendering is in keeping with the context of the scene)

Cannibalism

296 *Lear* The barbarous Scythian
Or he that makes his generation messes
To gorge his appetite —*King Lear* i 1
(*See 222*)

297 *Hippolyta* [illegible]
Have sod his rankling wounds with balm,
And killed the unborn impatience of his fight
At his nuptial feast. [illegible]

298 *Host* Go knock and call him; he shall sing or prattle.—And I pray thee, Jack Rugby, go and knock and call Dr. Caius the French physician to my house.

299 *Othello* And the rude multitude, that hearts not
The web of their life with the warp of their business,
Nor prizes the work well done, unless
The doer boasts: [illegible]
[illegible] the general [illegible]
[illegible] against [illegible]
[illegible] Wash the Black Ocean white with millions,
[illegible] Each drop she falls would prove a crocodile.
The place is dangerous; the time of action
[illegible] with his weight,
Till we have censured him: [illegible]
Our very silence, and the leisure, shall
Make us the judges, when he is arrived,
And that we have the voice.

Cardinal

313 *Host* I'll set you down, you shall—[illegible]
Farmers, [illegible]
make bite and fight: [illegible]
Drudges of the Commune [illegible]

Care

301 *Sir Toby* What a plague means my niece, [illegible]
sheep-biter, and that no friends with me for my cakes and ale? Care's a
turncoat.—*Twelfth Night*, I. 3.

(*See also* [illegible])

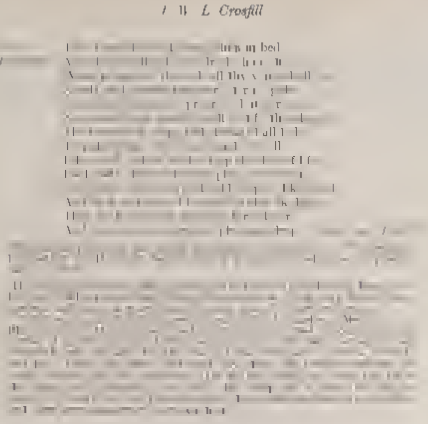
Cavalier

302 *Host* [illegible]
Second Servant Oh, when a man would be ranked as first [illegible]
Sly [illegible]
But did I never speak of all that time?
First Servant [illegible]

Taming of the Shrew, Induction

303 *Cassius* [illegible]
[illegible]
Which [illegible]
Let him [illegible]
Do what [illegible]
Make [illegible]
Let him [illegible]
Be [illegible]
Yet [illegible]
Cassius [illegible]
Cassius [illegible]
Are [illegible]
I pray [illegible]
Cassius [illegible]
And [illegible]
[illegible] the next chamber [illegible]
[illegible] the [illegible]
[illegible]
And [illegible]

—Julius Cæsar, III. 1



CATARACT

305 *Lat.* [illegible] not seen Caudl [illegible] bt son hav [illegible] [illegible] ick all s here [illegible]

306 *Icel.* [illegible]

307 *Ldgot* [illegible] ritt nam Blubbr ugibbit [illegible] gives the wib and the pu [illegible]

The pin and the web was the term used for cataract. [illegible] trace the origin of this phrase. It is used in a Statute of Henry VIII. [illegible] the making of the said Act the company and fellowship of the Surgeons of London mindful only of their own interes and nothing the profit of the diseased or patient have sued troubled and vexed divers honest persons as well men as women whom God hath endued with the knowledge of the nature kind and operation of certain herbs roots and waters and the using and administration of them to such as being pained with customable diseases as women's breasts being sore a Pin and Web in the eye uncomes of hands scaldings burnings sore mouths the stone strangury saucelm and morphew and such other diseases. Gerard [6] uses the same phrase. Marcellus Empericus an old writer who teaches us a medicine to be made of Tuta and Antura against the pin and web in the eies in English yellow Monks hood yellow Helmet flowre and Aconites Mithridate

Childbed

308 *Pe[illegible]* A verie ill childe I feare thou shalt [illegible]
Nought but paine—*Pericles* III 1

Childhood Second

309 *Goneril* Old men are like babes again—*King Lear* I 4

Child Marriage

310 *Lady* Well think I marriage must not [illegible]
Cap[illegible] Here in Verona ladies of esteem
Are made already mothers by my count
I will not have this maid [illegible] upon these years
But she will none she knows not what she does
So will I answer [illegible] *Romeo & Juliet* I 3
[illegible] Juliet [illegible]
[illegible] an Elizabethan [illegible]
[illegible] much [illegible]
[illegible] Holbeach's [illegible]

Children's Knees Sore Hells

311 *Hamlet* [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
312 *Hamlet* If [illegible] [illegible] were as his heels with [illegible]
[illegible] [illegible] [illegible]
313 *Hamlet* [illegible] [illegible]
I would put me to my slipper—*Love's Pilgrim* III 1
44 *Falstaff* Well as I am almost [illegible] heels
Hotspur Why then let kibes ensue—*Henry IV Part I* [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] all [illegible] [illegible] [illegible]

Chlorosis

The textbook description of chlorosis as a clinical syndrome [illegible] seen in England today Essentially an iron deficiency [illegible] suggested that bad hygienic conditions and tight lacing [illegible] indoor mentality were contributory factors It was a disease of females usually appearing at about the time of puberty Rarely it has been thought to occur in males

The Shakespearian view that sighing and grief were causes of anaemia is reasonable if such emotional disturbances were associated with anorexia and indoor brooding It is interesting however that chlorosis is not part of the clinical picture of starvation and does not occur in anorexia nervosa

Gerard's treatment [8] would have appealed to Falstaff The use of red Madder is an example of sympathetic medicine the use of a red colour to produce a red effect Provided that the injections as to diet were kept it is one of the few remedies recommended by Gerard which would produce the desired therapeutic result

If you take the roots of Manks Rubarb and red Maider of each halfe a pound Sena foure ounces Anise seed and Licorice of each two ounces, Scabious and Agrimone of each one handfull slice the roots of the Rubarb bruise the Anise seed and Licorice break the herbs with your hands and put

them into a stone pot called a steam with foure gallons of strong ale to steep or infuse the space of three daies and then drinke this honorable sum ordinary drink for three weeks together at the least though the longer you take it so much the better providing in a readinesse another steam so prepared that you may have one under another being always carefull to keep a good diet it purifieth the blood and makes young wenches look faire and cherry like

Gerard was even prepared to treat the believed fundamental pathology sighing

Sweet Marjerome is a remedy against cold diseases of the braine and head being taken any way to your best liking put up into the nosthrils it provokes sneesing and drawes forth much haggage flegme it easeth the toothache being chewed in the mouth The leaves boiled in water and the decoction drunke easeth such as are given to overmuch sighing

315 *Falstaff* There's never any of these demure boys come to any proof for thin drink doth so over cool their blood and making many fish meals that they fall into a kind of male green sickness —*Henry IV* Pt 2 iv 3

316 *Viola* She never told her love
But let concealment like a worm i' the bud
Feed on her damask cheek she pin'd in thought
And with a green and yellow melancholy
She sat like Patience on a monument
Smiling at grief —*Twelfth Night* ii 4

317 *Polonius* you speak like a green girl
Unsifted in such perilous circumstances —*Hamlet* i 3

(The use of green is here not a reference to chlorosis but rather to the unsettled flesh requiring shedding Similarly a green wound is a recent wound not a sloughing wound)

318 *Hamlet* And thus the native hue of resolution
Is sicklied o'er with the pale cast of thought —*Hamlet* iii 1

319 *Pandar* Now the pox upon her green sickness for me!
Bawd Faith there's no way to be rid on't but by the way to the pox —*Pericles* iv 6

320 *Capulet* Out you green sickness carrion! out you baggage!
You tallow face —*Romeo and Juliet* iii 5

321 *Lucilius* and Lepidus
Since Pompey's feast as Menas says is thick
With the green sickness —*Antony and Cleopatra* ii 7

CHOKE

322 *Gaunt* With eager feeding food doth choke the feeder —*Richard II* ii 1

CICATRICES

323 *King* Since yet thy table-cheek looks raw and red —*Richard III* iv 1

324 *Fluellen* Captain Gower hath his ensign in his cheek
I warrant he carries it in his sinister cheek —*All's Well That Ends Well* iv 1

(The left cheek of the Welsh soldier was wounded and the scar was mistaken by Gower for the mark of the Welsh badge of leek)

325 *Romeo* O serpent heart hid with a flowering face —*Romeo and Juliet* iii 2

[illegible]

328 [illegible]

CIRCUMCISION

Circumcision is and was [illegible] by no means confined to the Jewish race. Amongst others it was practised by the ancient Egyptians. This and other surgical procedures on the genitalia, both male and female, are described as ritual operations in various primitive races.

329 *Othello* . . . in Aleppo once,
Where a malignant and a turban'd Turk
Beat a Venetian and traduced the state,
I took by the throat the circumcised dog,
And smote him, thus. *Othello* [illegible]

CLOTHES SWADDLING

330 *Hamlet* That great baby you see there is not yet out of
his swaddling clouts. *Hamlet* ii. 2.

331 *Timon* [illegible] from our first swath. *Timon of Athens* iv. 3.

332 *1st Gentleman* Mark it: the eldest of them at three years old,
I' the swathing clothes the other.—*Cymbeline* i. 1.

COAGULATION

333 About the mourning and congealed face
Of that black blood a watery rigol goes,
Which seems to weep upon the tainted place:
And ever since, as pitying Lucrece' woes,
Corrupted blood some watery token shows;
And blood untainted still doth red abide,
Blushing at that which is so putrefied.—*Lucrece* 1744.

([illegible] referring to the [illegible])

COBWEB

334 *Bottom* I shall desire you of more acquaintance, good Master
Cobweb: if I cut my finger, I shall make bold with you.—
Midsummer Night's Dream iii. 1.

[illegible] cut fingers was known [illegible] the following extract taken from a textbook [illegible] written [illegible] M.D. a member of the Royal College of Surgeons [illegible] published in 1844 [illegible]

[illegible] A Popular Treatise [illegible] Domestic Materia Medica [illegible] with an Appendix on the Cold Water System.

[illegible] a valuable [illegible]

[illegible]

335 *H*[illegible]

[illegible]

496 *M*[illegible]

[illegible]

437 *I*[illegible]

[illegible]

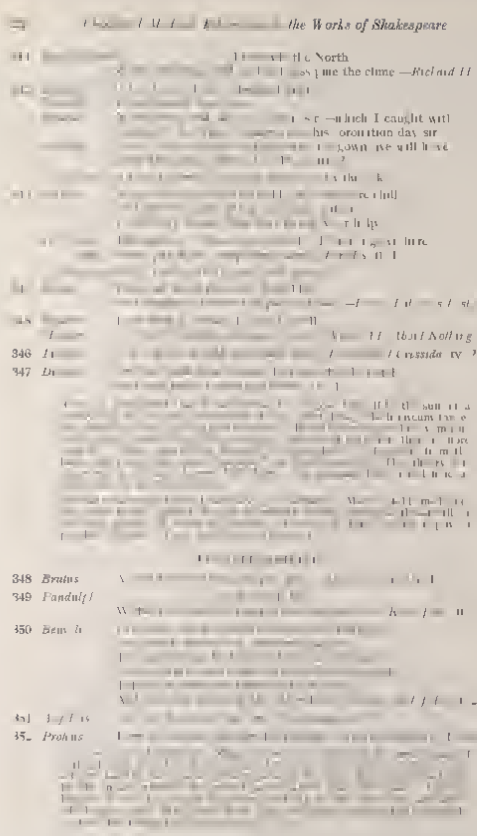
338 *Hordeo*

[illegible]

340 *Capitul*

[illegible]

341 *Post*



Cramp

355 [illegible] [illegible] horse [illegible] the hill
[illegible] [illegible] our leg. — *[illegible]*

356 *[illegible]* I'll rack thee [illegible]
Fill all thy [illegible] — *Tempest* 1. 2.

[illegible]

[illegible]

[illegible]

356 [illegible] [illegible]

357 [illegible] [illegible]
[illegible]
[illegible]
[illegible] — *[illegible]*

[illegible]

Curse: [illegible]

357 *[illegible]* [illegible]
[illegible]
[illegible]

[illegible]

358 *[illegible]* [illegible]
[illegible]

359 *Gloster* [illegible]
[illegible] — *[illegible]*

[illegible]

360 *[illegible]* [illegible] — *[illegible]*

361 *[illegible]* [illegible]

Death

362 *Hamlet* [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] — *[illegible]*

363 *Edgar* He [illegible]
Kent [illegible] so long. — *[illegible]*

364 *King John* [illegible] night
Salisbury [illegible] was past cure. — *[illegible]*

apprehension
great
Nature III 1

Death from Joy

Death in Labour

The Queen
great exclamation
Hamlet III

Death from Thunderbolt

struck with a thunderbolt —*Cymbeline*

Death Pangs of

pangs of death
King John V 7
death
Cymbeline V 5
in the throat of death
Love's Labour's Lost

Death, Signs of

Still
—*Othello* V 2

glass
breath will mist or stain the stone
Why then she lives
feather lies she lives —*Much Ado* IV 1
one dead or think
Taming of the Shrew

breaths of breath
breath whereof
scope that light and nimbleness
—*Henry VIII* II 3
accurate as the key
Fell sweat
and see if you can turn
her eye
breath within
Winter's Tale III 3
breathe? and this
Winter's Tale V 3

[illegible] had [illegible] her alive and is [illegible] remembered that [illegible] Originally Shakespeare [illegible]

3[illegible] [illegible] [illegible] but, alas, she's cold
[illegible] and her joints are stiff
[illegible] long been separated
[illegible] like an untimely frost
Upon the [illegible] flower of all the field [illegible]

[illegible] the picture of [illegible] [illegible]

3[illegible] [illegible] [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
And [illegible] [illegible]

3[illegible] *[illegible]* See [illegible] the blood [illegible]
But see [illegible] blood [illegible]
His [illegible] [illegible]
Staring full [illegible]
His hair [illegible]
His [illegible]
And [illegible]
[illegible]
It [illegible]
The [illegible]

381 *[illegible]* [illegible]
[illegible]
[illegible]

Death and Utterances

38[illegible] *[illegible]* [illegible] breathe truth that breathe their words [illegible]
[illegible]

383 *Othello* [illegible] death [illegible]
Desdemona [illegible]
Othello [illegible]
[illegible] —*Oth* [illegible]

381 *Cymbeline* [illegible]
Cornelius With [illegible] life
What [illegible] concluded
[illegible] What she confess'd
I will report, so please you
Cymbeline [illegible] knew this
And but [illegible] lying, I would not
Believe her lips in opening it *Cymbeline* [illegible]

Deformities

385 *Salarino* Nature hath framed strange fellows in her time —
Merchant of Venice I i 50

386 *Duchess* Then cloy'ish mark'd abortive rooting hog, I—*Richard III* IV iv 47
Margaret
(Uttering but Richard's crest as a boar's head)
387 *Gloster* Look how I am bewitched; behold mine arm
Is like a blasted sapling withered up
And that same hand, which ban'd me to the stake —*Richard III* III iv 71
388 *Oberon* To the best bride-bed will we,
Which by us shall blessed be;
And the issue there create
Ever shall be fortunate.
And the blots of Nature's hand
Shall not in their issue stand.
Never mole, hare-lip, nor scar,
Nor mark prodigious, such as are
Despised in nativity,
Shall upon their children be. —*A Midsummer Night's Dream* II i 97

389 *Antonio* In nature there's no blemish but the mind;
None can be called deformed but the unkind. —*Twelfth Night* V i 93

390 *Queen* And I, where's that valiant crook-back prodigy, *Henry VI* III iii 125
(Dickon thy mother's name) ordained?

391 *Queen* But thou art not what thou look'st like, thy sire and dam;
But like a foul misshapen stigmatic
Mark'd by the destinies to be avoided,
As venom toads or lizards' dens. In adding years, —*Henry VI* III iii 232

392 *Hermia* Why, gentle sweet, you shame me, hate me too.
And am I so, I never did deserve it.
Then let me go and hit me.
It follows not that I hate you because I do not love you.
I follow you, but you run away.
Whom follows him runs so long he will not stand,
To speak, to look on, woo him gently.
Do I entice you? Do I speak you fair?
Or rather do I tell you I am ugly?
Your virtues gentle, your deformity
[illegible]
[illegible]
[illegible]
393 *King Henry* This world-scorning quiet, my lord,
And unbegotten knowledge with less pain
Can lodge in shady cell, in crystal brook,
Under the forest's side, or hollow cave,
Than can the stirring wight in the busy press
Gloster Of all this that thou hast said,
But this: that I am not like other men.
Then whiles the vulgar sort
[illegible]
Do jest at me and scorn my timeless birth. *Henry VI* III ii 54

394 *Helena* I think my mother did her duty when she
Created of nature Hermia. Would

[illegible] sent before his time
[illegible] world scarce [illegible]
[illegible] and unfashionable
[illegible] these as I knit them —*I*[illegible]

385 [illegible] article grew as last
[illegible] trust at two hour [illegible]
[illegible] are I could get a [illegible]

396 *Ba*[illegible]
Be[illegible]
[illegible] *I am sad* [illegible]

397 *Sh*[illegible]
Nath[illegible]
Boyd [illegible]
Birot [illegible] *I*

(Ne[illegible]
re[illegible]
tal[illegible]
tre[illegible]
[illegible]

398 *Prof*[illegible]
A fa[illegible]
A hurri[illegible]

399 *Caliban* And all [illegible]
With [illegible]

{ Barnacle [illegible]
adjacent [illegible]
white [illegible]
thick shells [illegible]
living thing, [illegible]
Barnacles [illegible]
geese, but [illegible]
[illegible]
it spar[illegible]
I shall very [illegible]
terminate [illegible]

Delirium

400 *Birotto* These are [illegible]

401 *Fosbrookus* Its still [illegible]
I must [illegible]
Or useless [illegible]
As sense can not untie.—*Cyrtbo*[illegible]

Delusions

402 *Ford* Well [illegible]
Page No [illegible]

Dentist

403 *Biron* [illegible]

Dicoumarin

404 *Faucort* With [illegible]
[illegible]
Wi[illegible]
[illegible]

[illegible] in 1942 [illegible] on the [illegible] possible that [illegible] it [illegible] sheep [illegible] diet which is [illegible] haemorrhage [illegible]

Diet

405 *Cassio* Or feed upon such nice and waterish diet —*Othello* III 3

406 *Desdemona* Or feed on nourishing dishes or keep you warm —*Othello* III 3

407 *Antonio* I will bespeak our diet —*Twelfth Night* III 3

408 *Cassius* We have both fed as well and we can both
Endure the Winter's cold as well as he —*Julius Caesar* I 2

409 *Gaunt* And who abstains from meat that is not gaunt? —*Richard II* II 1

410 *Catharine* The meat was well if you were so contented
Petruchio I tell thee Kate 'twas burnt and dried away
And I am expressly forbid to touch it
For it engenders choler planteth anger
And better 'twere that both of us did fast —
Since of ourselves ourselves are choleric
Than feed it with such over roasted flesh —*Taming of the Shrew* IV 1

411 *Hostess* [illegible] she had a good dish of prawns whereby thou didst desire to eat some whereby I told thee they were ill for a green wound —*Henry IV* Pt 2, II 1

[A green wound [illegible] one recently inflicted that is fresh It does not imply a festering wound

Clownes Woundwort [illegible] All heale [illegible] stamped with Axungia or hogs grease and applied unto greene wounds in manner [illegible] putrefie [illegible] little time and in such absolute manner that it is hard for any that have not had the experience thereof to beleeve [illegible] Since which time [illegible] cured many grievous wounds and [illegible] with the same herbe [illegible] example done upon a Gentleman of Grayes Inne in Holborne Mr [illegible] Cartwright who was thrust into the lungs the wound entring [illegible] part of the Thorax or the breast blade [illegible] insomuch that from day to day [illegible] and pieces of the lungs did spew forth of the wound [illegible] was possessed of besides the Gentleman was [illegible] with a double quotidian fever whom by God's permission I perfectly cured in very short time and with this Clownes experiment and some of my [illegible] helpes [illegible] In like manner I cured a Shoe maker's servant in Holborn who intended to destroy him self for causes known to many now living but I deemed it better to cover the fault than to put the same in print [illegible] might move such a gracelesse fellow to attempt the like [illegible] attempt was thus [illegible] gave himselfe [illegible] mortall wound in the [illegible] that when I gave him drink it came forth at the wound [illegible] the candle another deep and grievous wound in the breast with the said dagger and also two others in the Abdomine [illegible] mortall [illegible] by God's permission and the [illegible] of this herbe I perfectly cured within twenty daies for the which the name of God be praised [Gerard's Herbal]

412 *Falstaff* Marry there is another indictment upon thee for suffering flesh to be eaten in thy house contrary to the law —
Henry IV Pt 2 II 4

[illegible] meat was forbidden in Elizabethan England during Lent [illegible] except when slaughter was licensed for the [illegible]

[illegible] that the law was not infrequently [illegible] that [illegible] mutton or two or a whole [illegible]

[illegible] *H* Pt 1 reads
2s 2d
4d
5s 8d
[illegible] 2s 6d
ob
[illegible] penny

413 [illegible] [illegible] but one half-pennyworth of bread
to this intolerable deal [illegible] —*Henry IV* [illegible] 4

(" [illegible] much [illegible] that [illegible] the table at least [illegible] the day [illegible] some sickly men [illegible] perhaps [illegible] general The English eat but two meals [illegible] dinner and supper [illegible] old never [illegible] for myself and other English [illegible] that we [illegible] prepared [illegible] the Italians [illegible] charges full [illegible] like meats [illegible] worth of bread And [illegible] we were more temperate [illegible] more bread than [illegible] 1117)

414 *Bassanio* But it be so hasted that supper be ready at the [illegible]
farthest by five of the clock —*Merchant of Venice* II 2

415 *Gobbo* I have here a dish of doves that I would bestow upon
your worship —*Merchant of Venice* II 2

(" [illegible] dishes and change of meat the nobility [illegible] there is no day in manner that passeth over [illegible] beef mutton veal lamb kid pork [illegible] these as the season yieldeth but also some portion [illegible] beside great variety of fish and wild fowl and [illegible] also gellifs of all colours mixed with [illegible] sundry flowers herbs trees forms [illegible] marchpane sugar bread gingerbread [illegible] nobility gentry and students do ordinarily go [illegible] and to supper at five or between five and six at [illegible] [illegible] seldom before twelve at noon and [illegible] London The husbandmen [illegible] seven or eight but out of term in [illegible]

William Harrison's Description of England 1587 [illegible]
[illegible])

416 *Shallow* Some pigeons Davy a couple of short-legged hens a joint
of mutton and any pretty little tiny kickshaws tell William
cook —*Henry IV* Pt 2 v 1

417 *Thersites* Thou mongrel beef-witted lord *Troilus and Cressida* II 1

418 *Sir Andrew* I am a great eater of beef and I believe that [illegible]
harm to my wits —*Twelfth Night* I 3

419 *Biron* Say can you fast? your stomachs are too [illegible]
And abstinence engenders maladies *Love's Labour's Lost* [illegible]

420 *Menenius* I'll watch him
Till he be dieted to my request *Coriolanus* v 1

421 *Speed* Though the chameleon love can feed on the air [illegible]
that am nourished by my victuals and would fain have
meat —*Two Gentlemen of Verona* II 1

(" That the Chameleon lives only by Air [illegible] Sir Thomas Browne's [illegible])

422 *Alencon* They want their porridge and their fat bull beeves —
Henry VI [illegible]

Digestion

1[illegible]	*H—b l*	Now good digestion wait on appetite And health on both!—*Macbeth* III 4
1[illegible]	*I*	Why this slave Into this hour his may lord's meat in him Why should it thrive and turn to nutriment In him when he is turned to poison!—*Timon of Athens* III 1
425	*Gr*	Things sweet to taste prove in digestion sour—*Richard III* I 3
426		So surfeit-taking Tarquin fares this night His taste delicious in digestion souring *Lucrece* 698
427	*Poor H*	She either gives a stomach and no food Such are the poor in health or else a feast And takes away the stomach—such the rich That have abundance and enjoy it not—*Henry VI* Pt 2 IV 4

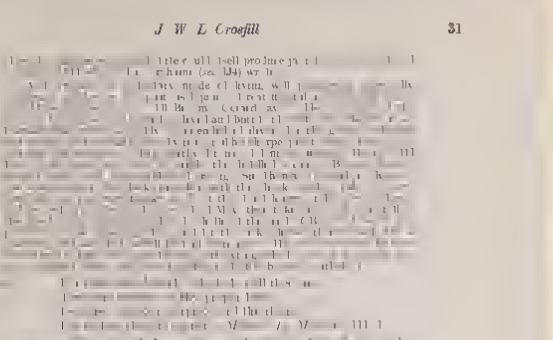
The Marmalad or Cotonat made of quinces and sugar is good and profitable to strengthen the stomack, that it may retain and keep the meat therein untill it be perfectly digested Gerard's Herbal

Diplopia

428	*H—n*	Methinks I see these things with parted eye When every thing seems double—*Midsummer Night's Dream* IV 1

Diseases

429	*I—s*	But like the owner of a foul disease To keep it from divulging let it feed Even on the pith of life—*Hamlet* III 5
430	*H—s*	and yet my heart Will not confess he owes the malady That doth my life besiege—*All's Well That Ends Well* II 1
431	*T—n*	Of man and beast the infinite maladies Crust on quite over—*Timon of Athens* III 6
432	*Timon*	And flinty diseases lick up their false bloods—*Timon of Athens* IV 3
433	*Griffith*	He fell sick suddenly and grew so ill He could not stir his mule—*Henry VIII* IV 2
434	*Caliban*	The red plague rid you for learning me your language! *Tempest* I 2
435	*Pandulph*	May thousands of us Brave the disease and feel it not—*King John* III 4
436	*Lust*	Where great additions swell and virtue none It is a dropsied honour—*All's Well That Ends Well* II 3
437	*Benedick*	Miss a gad my elbow itched I thought there would be a scab follow *Much Ado About Nothing* III 4
438	*Duke*	I cannot sick when I do look on thee And I am sick when I look not on you— *Midsummer Night's Dream* II 1
439	*Gratiano*	With mirth and laughter let old wrinkles come And let my liver rather heat with wine Than my heart cool with mortifying groans Why should a man whose blood is warm within Sit like his grandsire cut in alabaster? Sleep when he wakes? and creep into the jaundice By being peevish—*Merchant of Venice* I 1



441 *Hamlet* No [illegible] the [illegible] gripping
[illegible] lungs
[illegible] the palot
[illegible]
It is not Cassius

[illegible] and clever sort
[illegible] the passa
[illegible] peare makes
[illegible]
[illegible] At that period [illegible]

442 *Count* the most [illegible] wrote [illegible]

443 *Griffith* He fell sick [illegible]
He could not [illegible]
So went to bed [illegible]
Pursued him still [illegible]
About the hour [illegible]
slept in peace —*Henry VIII*

DISCARDS

444 *King* Our state to be disjoint [illegible] —*Hamlet*

445 *Hamlet* The time is out of joint —*Hamlet*

446 *Lear* Which like an engine wrench'd my frame of nature
From the fix'd place drew from my heart all love
And added to the gall —*King Lear* I 4
(Referring to the dislocations produced by the torture of the rack.)

447 *Albany* These hands
Thev're apt enough to dislocate and tear
Thy flesh and bones *King Lear* IV 2

448 *Hostess* thou hadst drawn my shoulder out of joint —*Henry IV* Pt 2 v 4

449 *Autolycus* O good sir softly good sir I fear sir my
shoulder blade is out —*Winter's Tale* IV 2
(Autolycus is in fact malingering.)

Dizziness

450 *Edgar* stand still How fearful
And dizzy 'tis to cast one's eyes so low!
I'll look no more
Lest my brain turn and the deficient sight
Topple down headlong —*King Lear* IV 6
(Edgar is standing on a high cliff.)

451 *Troilus* I'm giddy expectation whirls me round —*Troilus and Cressida* Pt 2

452 *Widow* He that is giddy thinks the world turns round —
Taming of the Shrew v 1

453 *Stephano* Prythee do not turn me about my stomach is
not constant —*Tempest* III 2

454 *Benvolio* Turn giddy and be holp by backward turning —*Romeo and Juliet* II 2
(Dearea Lares or Mountain Cowslips they that dwell about the Alpes I so call it by reason of the effects thereof for the root is amongst them in great request for the strengthning of the head that when they are on the toppes of places that are high giddinesse and the swimming of the braine may not offend them it is there called the Rocke Rose for that it groweth upon the rockes and resembleth the brave emblem of the rose Those that hunt in the Alps and high mountaines after Goats and Bucks do as highly esteeme hereof as of Doronicum by reason of the singular effects that it hath (as I said before) one especially even in that it preventeth the loss of the fore feet I vnts (I meane their necks) if they take the roots hereof before they ascend the rocks or other high places (Gerard's Herbal)

Doctor

455 *Hamlet* Your wisdom should show itself more richer to signify this
to his doctor for for me to put him to his purgation would
perhaps plunge him into more choler —*Hamlet* III 2
(The statute of Henry VIII previously quoted (307) has also Be it enacted that it shall be lawful to persons having the knowledge and experience of the nature of herbs roots and waters to practise use and minister to any outward sore maime wound apostemations outward swelling or all manner of sores any herb or herbs barbs pultes and emplasters ointments drinks for the stone or strangury or agues without any suit or trouble penalty or the loss of their goods this aforesaid statute or any Act to the contrary thereof made in any wise notwithstanding.)

Dreams

456 *Hostess* I will ride thee o'nights like the mare —*Henry IV* Pt 2 II 1

457 *Antigonus* Dreams are toys
Yet for this once yet superstitiously
I will be squared by this —*Winter's Tale* III 3

458 *Iago* [illegible] help me to this fortune
[illegible] hunting, serpent from egg!
[illegible] thrift, villainous shallow
[illegible] I do wake until her
[illegible]

Drinking Habits

459 *Iago* I learned it in England where indeed they are most
potent in potting
Is your Englishman so expert in his drinking?
Iago Why he drinks you with facility your Dane dead
drunk he sweats not to overthrow your Almain he gives
your Hollander a vomit ere the next pottle can be filled.—

Othello II 3

[illegible] point of drinking the English at the first will drink down all the
[illegible] drunkenness of special friends in respected honorable persons—
[illegible] one gentlemen to another shall be wassail with [illegible]
[illegible] custom of the Germans large carousing but this end to
[illegible] to your measure left

Jacques Yver in 1617

[illegible] drunkenness and [illegible] too much set to Ahasuerus (the English)
Philip Stubbes The Anatomie of Abuses 1583)

460 *Iago* Your [illegible] may be drunk at some time.—*Othello* II 3

461 *Hamlet* The King he [illegible] drunkards.—*Hamlet* I 4

(Hamlet refers to the Danes. Croft on this statement is to be found in Hentzner's Itinerarium Germaniae Galliae Angliae Italiae 1629 to which the Danes are [illegible] not drunkards)

462 *Iphigenia* [illegible] huge mug I should feast drink all meals
[illegible] shall say my wife pot's dangerous note
[illegible] drunkards should drink with hatness on their throats —

Timon of Athens I 2

[illegible] is usually like the pots goblets jugs bowls tankards
[illegible] also in fine Venice glasses of all forms and fashions
[illegible] of earth sundry colours and mould whereof many
[illegible] with silver in all the last wise in power all which notwithstanding [illegible] but each one as necessity urged called for
[illegible] drink have so that when he hath used this
[illegible] with the cup and name [illegible] standeth by whereby
[illegible] the like that remaineth next to the emptor
[illegible]

William Harrison Description of England 1587

[illegible] said that the glass bottomed drinkards was introduced [illegible]
[illegible] told see what his associates were about whilst his throat was exposed to the dangers of each [illegible] potation)

463 *Merchant* I am known well to [illegible] a thing rich politician and one that loves
a cup of hot wine with not a drop of allaying Tiber in it
said to be something imperfect in favouring the finest
complexion
If the drink no good one touch my palate adversely I make
a crooked face at it I care not what harm the wine does to
my credit [illegible] to spectacles glean out of this character.—*Coriolanus* II 1

(Bisson conspectuities blur eyes. As used here almost implies ought to a reference to diabetes. It is said that the Ebers Papyrus [illegible] circa 1500 BC mentions diabetes since it contains a prescription [illegible] those who pass too much urine. It was Aretaeus in the second century who really described diabetes. The presence of sugar in such urine was recorded by Thomas Willis (1621–1675) in his Operationes Medicinae in Hermann Boerhaave. Willis called diabetes alternatively the pissing evil an example of [illegible] slang, were in common usage in earlier times.)

Drowning

404 *Sergeant* As in a theatre sweet sweeters That tickling ingratiate
And choke their art — *Macbeth* I 4

465 *King John* Bear with me cousin for I was amazed
Under the tide but now I breathe again
Aloft the flood — *King John* IV 2

466 *Clarence* O Lord I methought what pain it was to drown
What dreadful noise of waters in my ears
What ugly sights of death within mine eyes — *Richard III* I 4

[illegible] he reel but lurch to wash himself in the Hellespont
ned being taken with the cramp was drowned —
As You Like It IV 1

Drug

105 *Friar* The drug he gave me which he said was precious
And cordial to me have I not found it
Murderous to the senses — *Cymbeline* IV 2

Dumbness Tongue tie

[illegible] in should have purged the youth to dumbness —
Twelfth Night III 2

[illegible] They cannot purge confess in their guiltiness — *Julius Cæsar* II 1

[illegible] However yet might haply think
Time out tired ambition not replying yielded — *Richard III* III 7

[illegible] I have words to speak in thine ear will make thee dumb —
Hamlet I 3

473 *Juno* Like Turkish mutes shall have a tongueless mouth — *Henry V* II 2.

474 *Theseus* Where I have come great clerks have purposed
To greet me with premeditated welcomes
Where I have seen them shiver and look pale
Make periods in the midst of sentences
Throttle their practised accents in their fears
And in conclusion dumbly have broke off
Not paying me a welcome
Love therefore and tongue tied simplicity
In least speak most to my capacity — *Midsummer Night's Dream* V 1

(Dumb tongue-tie in the sense of neuromuscular fixation of the tongue is rare in fact as I compute it like lore bold [illegible] used to be a common request to my first patient days for a child's check to be sent benevolent the child might the baby was backward in learning to talk dumb in the belief that it was tied the tongue

Although anatomical shortening of the tongue could undoubtedly produce mutism there is no practice would scarcely have obtained congenital absence of the tongue [illegible] not necessarily excite mutism Sanhagun in 1754 reported a case of the Lord Monmouth which a tongueless girl could speak [illegible] and swallow with difficulty [illegible]

The Homes of the Valley Lillie du Pied with wheat and breaks the [illegible] of a spoonful restoreth speech to those that have the [illegible] that are filled with the Apoplexie and are good against the giddiness of the heart 5))

Dwarfs

Dwarfs in Tudor and Restoration times occupied a very different social position (or rather were able on occasion so to do) to that which is their lot today They were collected by the Courts and similar social circles and

In some favour [illegible] The following illustrative extracts are taken from Gould's Anomalies of Medicine in which the subject is treated at some length Charles IX had nine dwarfs in his household Catherine de Medicis kept pygmies having five in 1597

In 1666 Cardinal Vitelli gave a banquet at which the table attendants were thirty four dwarfs

In 1710 Peter the Great gave a celebration for his favourite dwarf Valakoff at the latter's marriage to a dwarf of the Princess Prascovie Theodorovna Seventy two dwarfs of both sexes formed the bridal party

Dwarfs feature in the paintings of Velasquez Raphael and Mantegna amongst others Many dwarfs have achieved historical fame for their abilities and activities such as Esop Attila the English painter Gibson and Godeau who was created Bishop of Grasse by Cardinal Richelieu

Geoffrey Hudson born at Oakham 1619 was a foot high at 8 years of age when he was presented in a pie to the wife of Charles I and became her favourite He took part in Court activities was given command of a Royalist company fought a duel with a man called Croft shooting his opponent in the chest and was sent to France to engage a midwife for the Queen His political interests at length saw him confined in the Gate House at Westminster where he died in 1682

The keeping of dwarfs was not merely a Middle Age custom The Roman Emperors had the same taste To assist in the production of dwarfism an unguent was prepared from the fat of bats, moles and mice which was applied down the spine

One of the best known dwarfs of recent times was General Tom Thumb born in Connecticut in 1832 and exhibited by Barnum He was presented to Queen Victoria in 1844 later married another dwarf and retired with a fortune He was a normal child at birth but ceased his growth at the age of five months when he was short of 21 in in height

The skeleton of a Sicilian dwarf, Caroline Crachami is preserved in the Royal College of Surgeons Museum (It has survived the bombing of World War II) It is exhibited alongside that of the famous Irish Giant O Brien and is 19 8 in high

475 *Lysander* Get you gone you dwarf
You minimus of hindering knot grass made
You bead you acorn —*Midsummer Night's Dream* III 2

(Thus belief in the power of knot grass to restrict growth is also expressed by the wife in Beaumont and Fletcher's *Knight of the Burning Pestle* the child's "fatherless child and I say they shall put him into a straight pair of gaskins Twere worse than knot grass he would never grow after it Gerard [5] believed that the Daisy had a similar property The juice of the leaves and roots snuff up into the nostrils purgeth the head mightily and helpeth the megrim The same given to little dogs with milke keepeth them from growing greate)

476 *Norfolk* Their dwarfish pages were
As cherubims all gilt —*Henry VIII* I 1

DYSPNŒA

477 *Mr. Sp—ker* Who almost dead for breath, and cannot speak
Than would make up his message. *Richard II*, I. 4.

478 *Cæsar* Why are you breathless? and why stare you so? *Julius Cæsar*, I. 3.

479 *Ophelia* His beard as white as snow,
All flaxen was his poll.—*Hamlet*, IV. 5.

480 *Ophelia* Lord, we know what we are, but know not what we may be.—*Hamlet*, IV. 5.

481 *York* Is breath thine foe? and shun'st thou that to use?
Richard III, IV. 4.

482 *Hamlet* I respect with love as nurses with a child.
Dry me down a little thicker by the *Hamlet*, III. 4.

483 *Hotspur* When I was dry with rage and extreme toil,
Breathless and faint, leaning upon my sword *Henry IV*, I. 3.

484 *Count* Sure he meets brevity in breath; short-winded. *Henry V*, III. 7.

485 *Nurse* I am aweary, give me leave awhile.
Fie, how my bones ache! what a jaunt I have had!
Juliet, what haste I can you not stay awhile?
Do you not see that I am out of breath?

Juliet How is't, that thou art out of breath, when thou hast breath
To say to me that thou art out of breath? *Romeo and Juliet*, II. 5.

486 *King* My wish would I but my lungs are wasted so
Their strength of speech is utterly denied me. *Henry IV*, II. 2.

(The bibliography and index will appear in the final part. Medical References in Shakespeare.)

(To be continued.)

ON GETTING BETTER RESULTS FROM THE SERVICE AFLOAT X-RAY UNIT

BY

Surgeon Commander G. L. HARDMAN, R.N.

DURING their Service careers all Medical Officers will do several commissions either ashore or afloat, during which time a small X-ray unit will be included in their medical equipment. Unfortunately many are shy of trying to use this unfamiliar diagnostic tool and therefore turn it over to the member of the Sick Berth Staff who has discovered how to assemble the machine and by which switches it is operated. Even if this member of the staff had had experience of radiography, the medical officer has three great advantages in operating the X-ray unit himself: he has examined the patient clinically and therefore knows what he is looking for; his knowledge of anatomy should enable him to position the patient so that the centre of the X-ray beam will pass through the part at which it is aimed; it is he who will finally examine the film and make the diagnosis, and is therefore best able to decide if the film is adequate. Three times I have served in ships with an X-ray unit and

in each film taking over found the work being done [illegible] to have been greatly improved with attention to minor details The failures of films are more often the result of neglect or one of the many minor points of technique than to a fault in the unit or of material other than film

The first step towards improvement of results is to check the state of the film The makers who even with a world wide sellers market are somewhat prejudiced state that deterioration starts to take place a year after manufacture Deterioration is much more marked in the fast ultra and "super" speed films than in the slower standard type The large size deteriorate more than the smaller sizes the reason for this I have never been able to discover All boxes of film should have a date stamped on them the date on which they were received by the Naval Store Officer from the manufacturer If more than two years old or undated and therefore probably a relic of the predating era films should be regarded with great suspicion To test a film it should be taken straight from its box or wrappings and developed in absolute darkness It is not necessary to use the whole film a small piece cut from a corner is sufficient If testing several boxes at a time mark each with a distinguishing letter which is also written in pencil before development on the piece of film Early deterioration will show as faint specks of grey over the whole film marked deterioration will be an irregular mottling Boxes of film should always be stored on their sides or ends but not flat They should be kept in a cool place and not close to where the X ray unit is being worked When a fresh supply of film is obtained it should be so stored that the remainder of the old stock is used up before beginning the new If the old is considered to be unsatisfactory it should be discarded as it will never return to standard by further keeping in the storeroom

The darkroom should be carefully checked It must be dark, even to the fully accommodated eye there must be no light leaks In ships most of the bulkheads between compartments contain numerous small holes These can easily be made light proof by fixing small pieces of black paper over them with strapping No light leak should be too small to be neglected Light getting in around the frame of the door may be blocked by fixing felt to it by the use of a curtain or by reducing the outside source of light or of course by a combination of these methods The safelight must be safe If the glass has been scorched if there is a too powerful bulb or if the light is too close to the film fogging may take place To check if darkroom fogging is occurring take an exposed film of a chest a bulb or any part and leave it under the safelight with one half covered After five minutes develop and if there has been fogging a clear cut line will be seen dividing the fogged and unfogged halves of the film Fogging takes place very much more readily in film which has been exposed to X ray If you find the safelight unsatisfactory or are suspicious of it process the films in total darkness With only one or two films at a time there will be no difficulty in doing this Darkroom Technician is one of the recognised occupations for which the blind are trained But if working in the dark you must have either a timer with an audible warning or a watch with a luminous dial

Mismanagement of the intensifying screens is a common source of trouble X ray film is very many times more sensitive to visible light than to X radiation The intensifying screens are coated with crystals of tungsten which luminesce give off visible light when in an X ray beam To make use of these properties the X ray film which has a sensitive emulsion on both sides—an ordinary photographic film is only coated on the side facing the camera lens—is placed between two intensifying screens in a light-excluding holder the cassette With this combination the film is very largely affected by the light given off the screens and only to a very small extent by the direct radiation This enables a considerable reduction in exposure times But in order that the film shall be affected by the light from the screens it must be unwrapped If it is in its envelope or has paper around it the light will be unable to get at it The screens must have their sensitive surfaces towards the film and should be kept scrupulously clean Dirt cigarette ash or splashes of developer on the screens will prevent them fluorescing satisfactorily and will result in blemishes on the film Nor are they cheap to replace and the greatest care should be taken with them The cassettes should if possible be unloaded and loaded on a different bench to that on which are the processing solutions to avoid the danger of the latter splashing out Dirt on the screens can often be washed off with soap and water on a soft cloth To avoid punching the margins of the screens on closing the cassette it is best to stick them in with ordinary paste or gum This also prevents them becoming reversed or the film getting behind one of them

A certain amount of fine detail is lost with the use of intensifying screens The small parts the hands wrist and feet should unless in plaster of Paris always be examined with the film in its envelope and not in the cassette For the larger parts use the cassettes The ankle and elbow are half way between small and large non screen film may be found more satisfactory than the cassettes or vice versa

The processing of films should be foolproof but this is where many that have been carefully taken are ruined All dishes used must be clean Mark the dish used for developer and that used for the fixer so that they always contain the same solution Make up both developer and fixer strictly according to the directions If as is probable the processing is done in dishes and not tanks the solution should be stored after use in corked bottles and kept in the dark, as the developer deteriorates on exposure to air Development should be strictly by time and temperature the optimum being five minutes at 67° F Never develop at under 62 or over 72° Heat or cool the developer to get it within this range but not by adding hot water or ice as this will dilute it At 72 the developing time will be three minutes at 62° ten minutes Never hold the film up to the safelight to see how it is getting on One may be tempted to diverge from the time temperature formula and then the developer will almost certainly run up the arm The emulsion scratches and takes up dirt very easily when wet so take care not to drop it or let it stick to another film I have found the most satisfactory way to hold the film while processing and drying to be by a towel clip It takes a good bite and the handles are long

enough to keep one's fingers out of the solutions. I develop a film quickly as when sending a patient to hospital after wishing it were dealt with sport on a piece of cotton wool and dry off in front of a fire.

Always use the cone on the front of the tube. It is a great help to know the exact area cut by this at normal working distances, and the easiest way to find this is by trial with the largest size film. This film can at the same time be used for checking an exposure factor and for testing the darkroom safelight—three useful experiments on the one film. Knowledge of the cone cut enables one to check the accuracy of centring, and is essential for those who aim to cut down scatter from the thicker parts by reducing the field to a minimum. When radiographing a joint the central ray from the tube must pass through the joint space. This means giving consideration to the lie of the joint surfaces, the axis of the tube and the position of the film.

Much needed small accessories are not provided on the scale. One must make one's own plumb line for centring, by tape measure check the correctness of the tube film distance, have made sandbags for immobilizing the part to be examined, obtain an adequate supply of lead or lead rubber for dividing the film so that more than one view can be taken on it, get made markers to distinguish the right side from the left. When one becomes dissatisfied with an old paper clip bent to form an R, one is beginning to become proud of one's radiography, and next one will be looking around for a fully so that the name of the establishment can be permanently marked on the film. On a non-screen film this can always be done by writing in pencil on the envelope before making the exposure. Best results are obtained by blanking off with lead a small section of film on which details of name, date and establishment are written, and then giving this a small independent flash exposure.

Although it is more than twenty years since I first took out and developed an X-ray—there were then no dirty radiographers at my London teaching hospital—I still have the same keen sense of anticipation while waiting to see the finished film as I have while waiting to hear the result of a race in which I have backed a horse. In radiography there can be the satisfaction not only of the craftsman who with his hands has produced something useful, but of the artist who has created something of beauty. How very fortunate we are to have with our work the key to this exciting and lovely world of shadows.

Clinical Notes and Cases

CYSTS OF THE SPLEEN

A Report of Two Cases

BY

Surgeon Commander M A RUGG GUNN, R N

SPLENIC cysts are not very common and those two are of interest in that both were very obvious radiologically both were cured by splenectomy and both were more or less symptom free in that it is doubtful whether such symptoms as either had were in any way referable to the cyst One was parasitic and one non parasitic It is not intended to review the whole subject of splenic cysts for which several classifications have from time to time been devised but the scheme most often followed is that of Fowler [1] who divided them under the following headings

(1) Dermoid cysts very rare
(2) Parasitic cysts these are virtually synonymous with hydatid cysts
(3) Non parasitic cysts These are divided into true and false cysts

The true cysts include the infolration type resulting from rupture of the capsule and an infolding of the peritoneum and are thus associated with trauma and inflammation polycystic lesions and more rarely neoplasms such as hæmangioma and lymphangioma These have a specific secreting lining either endothelial or epithelial The false cysts have a fibrous lining and a varied etiology trauma infarction and inflammation with subsequent degeneration and necrosis

Etiology of the dermoid and parasitic groups call for no comment in the non parasitic cysts the only proved factor is trauma though many other theories have been put forward [2 and 3]

The majority of non parasitic cysts have been found in young women The spleen enlarges slightly in menstruation and pregnancy [4] which may be responsible for the predominance of cysts in women of this age but on the other hand a clear cut history of trauma is seldom obtained

Splenic cysts are asymptomless unless they are large enough to cause pressure effects and of these minor digestive troubles are the most frequent

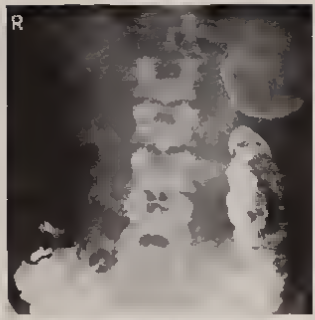
The question of diagnosis depends upon the size of the cyst small ones may be impossible to detect Radiologically the presence of calcification facilitates matters as their presence can only be guessed at in the absence of this A pneumoperitoneum helps to locate the tumour which has to be differentiated from cysts of mesentery kidney pancreas left lobe of liver and aneurysm of the splenic or renal arteries Splenectomy is now accepted as the approved method of treatment

[illegible]

Case II—Male, aged 21

This patient was admitted to hospital on [illegible] with a history of some what vague pains centred about the epigastrium, occurring either at night after going to bed or during the day. These pains had been present during the previous three weeks. The pain had been relieved by food and alkalis. There was no previous history of dyspepsia. He was a native of a village in Northamptonshire and had been in the Army since January 1947 and had only been stationed in Germany for a short time. His father was dead but his mother and two brothers were alive and well.

Clinical examination showed no abnormality except for some epigastric tenderness. No physical signs beyond a little tenderness in the epigastrium were found. The spleen was not palpable.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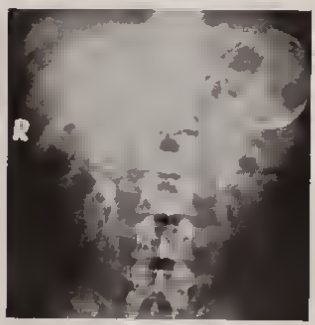
R

SUMMARY

[illegible] cysts of the spleen are [illegible] parasitic [illegible] me believed to be parasitic B th were treated by splenotomy A brief review of the aetiology and pathology of these cysts is given

REFERENCES

1 [illegible] R H (1913) *J* [illegible] **57** 658
Hermen M and C [illegible] J V (1946) Splenic cysts *Brit Med J* **1** 521
[illegible] R B (1941) C [illegible] tumours of the spleen *Internat Abst Surg* **70** 413
4 M [illegible] and Butler (1921) Surgery of cysts of the spleen *Ann Surg* **74** 20

ACUTE CORONARY THROMBOSIS WITHOUT PAIN

BY

Surgeon Commander T L CLEAVE, R N

Cases of acute coronary thrombosis without pain are not very rare Paul White (1931) quotes series of cases where the absence of pain ranged from 1 per cent to 38 per cent of the total The following three cases occurred at R N Hospital Plymouth during a period of a few months in 1942

Case 1 A male aged 56 was [illegible] club meeting when he suddenly felt the [illegible] so that he could come back Later that night he rang up his wife saying he was [illegible] and did not know how he had got there He eventually arrived home [illegible] had had a restless night He was seen by his doctor next morning who [illegible] and a little shocked with blood pressure 98 66 His only complaints [illegible] which he had had in mind off and on for some time The doctor prescribed [illegible] During the afternoon the patient collapsed at his club and was taken to [illegible] He complained of pain There was little evidence but marked dyspnœa temperature [illegible] respiration 30 blood pressure 116 65

[illegible] was considered to be one of a spreading coronary thrombosis The [illegible] great increase in myocardial ischæmia shown by the [illegible] the mental stress as often happens in heart cases The earliest [illegible] increased dyspnœa It was not at all typical of pulmonary [illegible] there were signs of pneumonia Cerebral thrombosis was excluded by [illegible] and the presence of dyspnœa

[illegible] oxygen was given without effect and the patient died [illegible]

A [illegible] to define cause Death was a small coronary thrombosis [illegible] and the clinical picture was that of an acute coronary [illegible]

Case 2 A [illegible] aged 59 was seized with a sudden belching, [illegible] of the [illegible] and the patient fell to the ground Unable during the next three days [illegible] could obtain only a [illegible] and sips of water [illegible] Temperature 100 8 Blood pressure [illegible] R N Hospital Plymouth where he gave the [illegible] He was [illegible] 150 90 and then [illegible] 80

[illegible] pain [illegible] but [illegible] Next [illegible] appearance [illegible] and [illegible] showed extensive [illegible] complexes

[redacted]

Comment

After pain the most prominent symptoms of coronary thrombosis are dyspnœa belching mental effects Slowing down of circulation explains the dyspnœa and mental effects can it also explain the belching? In my opinion yes In a barium meal there is almost invariably a very large air bubble at the top of the stomach due to air swallowed during the meal It may be assumed that this occurs in ordinary meals and the air is not even partly eructated If it is apologies are made The air is normally passed on into the intestine and absorbed with all the solid and liquid contents of the stomach But when the circulation slows this absorption becomes deficient and belching becomes necessary If very excessive no doubt some of the belching is of intestinal origin The effects of a slowing of the blood is well known to surgeons—vast

quantities of gas accumulating rapidly in any loop of gut whose blood supply is impaired

Coronary thrombosis without pain forms the basis of the most famous of all medical aphorisms—Dr Gees When a young man complains of his heart look to his stomach when an old man complains of his stomach look to his heart In this connexion I remember many years ago when first starting clinical clerk duties at a large teaching hospital a certain general practitioner who had some slight connexion with the hospital used to shepherd the medical students during their first few weeks there He was a most courtly and delightful old gentleman who had much of value to impart though none of it was exactly scientific in nature I recollect on one occasion that he told our eager little band about Dr Gees aphorism Only six months ago he added I had a middle aged patient who came to me complaining of indigestion for the first time in his life I could not find anything wrong and prescribed some tincture of rhubarb I told the relatives however that although the appearances were against it there was a very slight risk of heart trouble and sudden death The symptoms continued to be mild he went on but some weeks later the patient dropped down dead and I was very glad I had made the remark to the relatives One of us asked what was the cause of death Oh he replied I would not like to hazard a guess without a post mortem and Dr Gees tip will usually prevent anything unpleasant like that

My thanks are due to Surgeon Rear-Admiral T W D Arcy for permission to publish this article

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HOT WEATHER OTITIS EXTERNA

BY

Surgeon Commander H. H. FISHER, R N

A form of diffuse otitis externa is very common in hot climates characterized by pain swelling of the whole length of the meatus and an accumulation of pus and epithelial debris with fever

Though often apparently brought on by bathing heat and moisture from any source encourage the growth of micro organisms especially in the presence of pre existing macerated debris and with a congenitally narrow and angulated canal

It is much less often seen in native races whose external meatus tends to be wider and straighter than in Europeans

Culture yields pyocyaneus in every case sometimes associated with proteus Gram positive organisms are seldom found and penicillin and aureomycin are quite useless Much has been written about the disease and in the past magnesulph and glycerine astringents such as aluminium acetate lead zinc sulphate ichthyol aniline dyes have all had their adherents

[illegible] these are messy. The glycerine and mag sulph [illegible] by absorbing water, exudate astringents by suppressing it.

Recently it has been possible to approach the problem from a different angle by a direct attack on the invading organism. A culture of the pus is made and sensitivity of the organisms to antibiotics determined. In almost every case the organisms are sensitive to chloromycetin or streptomycin (more usually the former) sometimes to both. Chloromycetin is used as a 10 per cent. solution in propylene glycol: streptomycin 1 gramme dissolved in the minimum of water and glycerine added to 10 c.c.

Treatment.—The meatus is thoroughly cleansed of all pus and debris and lined. The appropriate antibiotic in 10 per cent. solution is introduced and a half-inch ribbon gauze pack, pushed right down the whole length of the meatus. This quickly dilates the swollen meatus. It is no use merely putting gauze or wool at the meatal orifice, but care is needed not to damage the drumhead. This procedure is repeated daily. An analgesic (veganin) is often required and occasionally morphia. Whilst waiting for the laboratory report on the organism and its sensitivity it is my practice to use chloromycetin as this is the antibiotic to which the organisms are mostly sensitive. With this treatment most cases of this type of otitis externa get well in two to four days.

A furuncle is a localized boil in the skin of the cartilaginous meatus. This lesion is of different pathology, is due to staphylococcal infection and requires a different treatment, usually penicillin and a hot mag. sulphate and glycerine pack.

ROYAL NAVAL MEDICAL SCHOOL

The following staff changes have taken place during July–December 1952:

Surgeon Commander W. Graves appointed to H.M.S. *Phoenix* as Specialist in Chemical Defence.

Surgeon Captain J. G. Maguire, C.B.E., joined as Director of Medical Research.

Acting Surgeon Captain (D) W. E. L. Brigham joined as Director of Dental Studies.

Commissioned Wardmaster A. J. Hanks joined for instructional duties with laboratory technicians.

The Commander-in-Chief, Admiral Sir John Edelsten, inspected the school on 8th October, 1952.

The Medical Officer-in-Charge, R.N. Hospital, Haslar, Surgeon Rear-Admiral J. Hamilton, inspected the school on 3rd December.

The following public lectures were given:

11th September, 1952.—"A.B.C.D. Organization."—Lieutenant-Commander J. P. Angell, D.S.C., R.N. (H.M.S. *Phoenix*).

[illegible] The Work of the R N [illegible] Research [illegible]
[illegible] Colonel [illegible] W L Gilliland M D
[illegible] Medical Department [illegible] Medical —[illegible]
[illegible] O B E Deputy Judge Advocate of the Fleet

The Ministry of Health film Diagnosis and Treatment of Poliomyelitis was shown on 23rd July 1952 to an audience of medical and nursing officers and senior sick berth ratings

The Director of Dental Studies held two meetings for showing dental films on 23rd September and 6th November 1952

A method meeting was held on 18th December 1952 and was organized by Surgeon Lieutenants Fay and Rutledge of R N Hospital Haslar The I C I coloured sound film Physiology of the Kidney was shown and this was followed by a discussion of the Treatment of Anuria

The revised eighteen months curriculum for training laboratory technicians was introduced in September There will be a nine-month course at the school followed by nine months in one of the home port hospital laboratories

The Editors of the *Nursing Times* and the *Nursing Mirror* attended the nursing officers course on Radiological Defence during the first week in December

Five short courses of general instruction for new entered medical officers were held during the period July December 1952

Nine officers of the Senior Officers Technical Course visited the school on 26th November 1952 and afterwards saw some of the research work in progress at R N Physiological Laboratory

Reviews

LUMBAR DISCTESIONS By J R Armstrong M D M Ch F R C S Orthopædic Surgeon to the Metropolitan and Lambeth Hospitals Visiting Orthopædic Surgeon to the Manor House Hospital and the Royal Waterloo Hospital for Women and Children First Edition 1952 Pp 228 Price 21s Illustrations 58 London and Edinburgh E F & S Livingstone Ltd Price 42s 6d

This book is of considerable interest to members of the Royal Navy Medical Service as the number of patients reporting with low back pain is considerably on the increase the treatment is prolonged and the results so far as returning the patient to duty within reasonable time are disappointing the large majority of these patients coming to notice and invaliding

The present book gives an exhaustive and lucid account of the signs symptoms and pathology of the lumbar disc syndrome with a very full account of the differential diagnosis

[redacted] methods of treatment their rationale the time required [redacted] thorough and detailed [redacted] and it is considered that this volume should [redacted] in the Medical Library [redacted] Hospitals and it will well repay reading, [redacted] medical officer

DISEASES OF THE SKIN By Robert M B Mackenna M A M D Camb F R C P Lond Physician in Charge [redacted] the Dermatological Dept and Lecturer in Dermatology St Bartholomew's Hospital and Medical College London Physician to St John's Hospital for Diseases of the Skin London Hon Consultant in Dermatology to the British Army With a Chapter Concerning Radiology By J G Williams F R C S Eng D M R E Cantab [redacted] F R C P Director of the Dept of Radiotherapy St Bartholomew's Hospital London Consultant Radiotherapist The Hospital for Sick Children Great Ormond St London Fifth Edition 1951 Pp xii + 612 Illustrations 95 Figs 7 London Bailliere Tindall and Cox Price 42s 0d

After [redacted] ly intervals approximating to [redacted] years the fifth edition of MacKenna's Diseases of the Skin comes fifteen years after the fourth and shows much evidence of revision re-setting and re-illustration

As in previous editions this book is presented as the best possible compromise in an attempt to satisfy the needs of the General Practitioner who requires a rather dogmatic approach to diagnosis and treatment the student who must have a very adequate description and if possible illustration of diseases to aid him in diagnosis and finally the dermatologist who looks for fresh and original concepts of diagnosis and treatment

This book achieves such an aim most admirably The text is easy to read and understand full without being crudely dogmatic but with the essential reservations and profusely and well illustrated

Reference to obscure diseases can mostly be found if only a line or two but any attempt to go into greater detail would expand unreasonably a book already over 600 pages long

There is a very good chapter on the use of radiology in dermatological and a most comprehensive and helpful chapter on treatment with physical therapeutic agents Diseases due to Fungi are dealt with in exceptional detail To include the volume—there is a small appendix containing suggested prescriptions and a very good index A bibliography has not been included

A number of printers errors—of which page 197 line 5 and page 304 paragraph 2 of L E D C lines 1 and 2 are examples—have escaped correction

This is a handy profusely illustrated dermatology and can be confidently recommended to any interested in the subject by the pre- or post-graduate

THE PHYSICIAN'S GUIDE TO CHEMOTHERAPY By [redacted] N Smith M R C I Physician Children's Department Edinburgh Hospital for Children All Saints Hospital Chatham West Kent General Hospital Maidstone Orpington Hospital and Cheyne Hospital for Children 1951 Pp xii + 148 London H K Lewis & Co Ltd Price 15s 0d

This volume is well-planned in both text and form The original statement so useful and indeed necessary in a book of this type is kept within the limits of 148 pages and the reader is referred for further information to standard textbooks and monographs Seven chapters are devoted to the characteristics of the thirteen chemotherapeutic agents now available in the treatment of diseases There is a very useful table of antibiotic activity

A statement that syphilis in pregnancy should no longer be treated in the treatment of gonorrhoea should be repeated clearly at least to medical officers in ante-natal appointments Even 200 000 units of penicillin may not be quite enough for the third trimester of pregnancy When large numbers of persons from all parts of the world with penicillin the serum control is quite a problem for the medical officer of health Of course a great many of the intelligent patients—especially when results take weeks to catch the ship In many ports some

50 per cent [illegible] still susceptible to sulph[illegible] and so they are still very valuable [illegible]

This book will [illegible] rapidly than most but [illegible] commission it will certainly occupy a place in the limited reference library [illegible] the reviewer

REFRESHER COURSE FOR GENERAL PRACTITIONERS By Various Authors Edited by the Editor *British Medical Journal* First Edition 1952 [illegible] pp 458 illustrations 7/4 London British Medical Association Price 25s 6d

The fifty five chapters of this book are a collection of the special articles commissioned articles which were published in the *British Medical Journal* between 5th February 1949 and 29th December 1950 in response to repeated requests that they should be republished in book form They are designed to refresh the memory of [illegible] and to bring to the attention what is new and it is intended that this book should be the first of a series of similar collections

The chapter headings form a random sample of the experience of general practice and the temptation to classify them systematically has been carefully resisted They have been reprinted month by month in the order in which they appeared and this has turned out to be a useful one for the consulting room from considerations of hypertension to infant feeding from [illegible] to Menorrhagia Some slight rearrangement has however been made for convenience the chapter on Poliomyelitis has been removed from its original position between the two articles on Penicillin which it was not included in one chapter on [illegible] and other subjects such as Congenital Heart Disease and Menstrual Disorders and Chloramphenicol which were originally published in two parts

Some of the titles reflect the stress which is appropriately placed on the importance of [illegible] in particular on Carcinoma of the Bronchus and on Tuberculosis of the Lungs and Meninges while saving operations on [illegible] therapy [illegible] and with reasonable hope of success

All the articles are by acknowledged experts and have been revised where necessary [illegible]

This is an easily readable and enjoyable book which should be kept handy on the [illegible] even on the bedside table—to be dipped into for fifteen or twenty minutes at a [illegible] and refreshing accompaniment to [illegible] Second and third collections can be anticipated with pleasure

[illegible] Its Development Variation and Assessment By John C Raven, M.A. First Edition 1952 Pp xiv + 216 London H K Lewis & Co Ltd Price 21s 0d

[illegible] of this book indicates that the author has undertaken a heavy task He [illegible] and has found that a single book intended for [illegible] and with the [illegible] of other people amongst whom he includes nurses doctors [illegible] business people may not benefit anyone and the subject matter is [illegible] for any part it reads more like a [illegible] book on [illegible] for a [illegible] and varied group

[illegible] with 17 pages of [illegible] which seems disproportionately [illegible] parts of the [illegible] Its Development Variations in [illegible] Assessing Abilities and Interests and finally there is an appendix [illegible]

[illegible] of the work by the originator of the excellent Progressive Matrices [illegible] is by far the best It contains a lucid and interesting [illegible] and critical appraisement of the [illegible] tests Its only apparent omission is a statement in this section is [illegible] which according to the author [illegible] research Lysenk however has described an evidently [illegible] personality which obviously varies inversely [illegible]

[illegible] begin with [illegible] jargon [illegible]

[illegible] of McD [illegible]

The [illegible] These definitions [illegible] by reference [illegible] The latter [illegible] surprising [illegible] both glossary and index [illegible] large in the text.

The third part and the appendix [illegible] would in the [illegible] be [illegible]

ANY QUESTIONS. [illegible] British Medical Association. [illegible] Price 7s. 6d. [illegible] questions and answers [illegible] *Journal*.

This useful [illegible] popular and [illegible] highly recommended.

In it will be found answers [illegible] consulted and which [illegible] memory—or more probably [illegible]

The ground covered [illegible] random for example [illegible] erythema nodosum [illegible]

There are in all 193 questions [illegible] indexed—and at 7s. 6d. [illegible]

ALLERGY AND SENSITIVITY [illegible] Lewis & Co. Ltd. Price [illegible]

This is a very difficult book [illegible] members of our profession [illegible] his preface the book is intended [illegible] tioners. It is felt that only those [illegible] be able to appreciate the clinical [illegible]

The subject itself [illegible] short list of conditions liable [illegible] question the validity [illegible] alopecia (allergic) [illegible] (allergic) [illegible] (allergic) psoriasis (allergic) [illegible]

[illegible] scientifically [illegible]

[illegible] the local [illegible] of the [illegible] mercury, and [illegible] inflamed [illegible] served most [illegible]

[illegible] between [illegible] important [illegible] which he [illegible] Whitfield [illegible] necessarily [illegible]

POCKET PRESCRIBER. [illegible] 15th Edition. [illegible] — 294. [illegible]

The fifteenth edition [illegible] first published in 1882 [illegible] a wealth [illegible] up to date.

[illegible]

[illegible]

[illegible] M.R.C.S., F.R.C.P., F.R.S. [illegible]

[illegible] M.A. [illegible] M.D., F.R.C.P. [illegible]

[illegible] publishers [illegible] for sale.

[illegible] O.B.E., M.A., M.Ch. [illegible] F.R.C.S. [illegible] Orthopaedic Surgeon [illegible] Hospital [illegible] M.D., M.S., F.R.C.S., F.A.C.S. (Hon.) [illegible] illustrations. [illegible] Edinburgh [illegible]

[illegible] the hands of the [illegible]

[illegible] principles [illegible] operation [illegible] high percentage [illegible]

[illegible]is of the shoulder. This book first published in 1942 so [illegible] clearly the [illegible] of the technique [illegible] forming arthrodesis of all [illegible].

The first chapters present the indications for arthrodesis [illegible] cases of [illegible] and set forth the architectural principles. Illustrations of [illegible] and [illegible] the arches of Norwich Cathedral are aptly used to [illegible] strains [illegible] occurring in orthodox [illegible] arthrodesis of the [illegible].

A chapter on the fixing figures [illegible] and thumb follows [illegible] the [illegible] book describes the author's methods of arthrodesis [illegible] [illegible] [illegible] and thumb. An appendix describes the Nuffield [illegible] [illegible] [illegible] an operation which the author considers is one of the [illegible] [illegible] [illegible] [illegible].

The new edition is greatly enlarged and contains follow-up [illegible] [illegible] paragraphs [illegible] published in the first edition. A new operation is described [illegible]. The book [illegible] [illegible] which disposes with immobilization in a plaster spica and thus avoids [illegible].

This is an excellent book. It is written clearly, shortly and [illegible]. The [illegible] and [illegible] are all that high standard which one [illegible] with books published by E. & S. Livingstone.

A Text-book of Physiology. By Samson Wright, M.D., F.R.C.P. London, F.R.S. Ed. Fifth edition. London: Oxford University Press. Middlesex Hospital Medical School, North Place, W.1. 1952. Pp. xx + 1190. London: Oxford Medical Publications. Price 50s. net.

Professor Samson Wright's Applied Physiology is the classic textbook for [illegible] students of physiology and in this ninth edition the author and his [illegible] Professor M. Mazzi and Dr. John B. Tepson have managed to continue the [illegible] work as the first edition started for medical readers, emphasis [illegible] [illegible] [illegible] further attention to those functions commonly deranged in disease. The object of this without getting too embroiled in the mass of physiological fact and conjecture readers this ninth edition as valuable as its predecessors to all who wish to continue their interest in the physiology of the human animal organism and its functional derangements.

As the preface states it is virtually a new book. Alteration in the order of the subject matter has been made, new chapters added, illustrations and better figures make this book outstanding. With its rich professional flavour it may be stated this Wright's textbook contains the foremost expressions of physiological opinion in the English language.

The publishers are to be congratulated upon the style, format and printing of this work. This edition is to be used as a physiological and surgical textbooks and should be on the desk of medical officers.

BOOKS RECEIVED

World Health Organization. Monograph Series No. 9. 175 pages. Biology of Anopheles Gambiae. By M. H. Hulsten. Price 10s. 0d. English Edition in preparation.

World Health Organization. Technical Report Series No. 48. 30 pages. Medical Approach to Alcoholism. Second Report of the Alcoholism Subcommittee. Price 2s. 0d. Available also in French Edition.

World Health Organization. Technical Report Series No. 59. 22 pages. Methods of Trachoma Control. First Report of the W.H.O. Expert Committee on Trachoma. Price 1s. 3d. Available also in a French edition.

We acknowledge with thanks receipt of the following publications

Anales de la Facultad de Medicina Montevideo *Annales Medicale Interne Lyon* *Journal of Tropical Medicine and Parasitology* The Antiseptic *Anshahan Journal of Experimental Biology and Medical Science* *British Journal of Surgery* *British Medical Journal* *Brotéria* *Bulletin International des Services de Santé* *Bulletin of Sydney Hospital Medical Society* *Bulletin of the World Health Organisation* *Chronicle of the World Health Organisation* *Gunma Journal of Medical Sciences* *Guy's Hospital Gazette* *Journal of the Bowman Gray School of Medicine* *Journal of the Irish Medical Association* *Journal of the Royal Army Medical Corps* *Journal of the Royal Naval Sanitary Service* *Medical Journal of Australia* *Medical Press* *Middlesex Hospital Journal* *Military Surgeon* *Nagoya Journal of Medical Science* *Proceedings of the Staff Meetings of the Mayo Clinic* *Russian Medicine Annonaires* *Studenkin Arts Medicus* *St Mary's Hospital Gazette* *St Thomas's Hospital Gazette* *Tohoku Journal of Experimental Medicine* *Tropical Diseases Bulletin* *Ulster Medical Journal* *University of Durham Medical Gazette* *United States Armed Forces Medical Journal* *United States Medical Technician* *Yale University Medical Bulletin*

News of the Service

OBITUARY

[illegible] Lieut-Col E N BELLEROPHON R N (Retd) died on the 12th October 1952. Born [illegible] 1881 he qualified in 1913 and entered the R N Medical Service as [illegible] Lieutenant on the 14th April 1915. He previously served with the R A M C [illegible] and in Surgeon Lieutenant Commander in September 1920. Surgeon [illegible] 1926 and was placed on the Retired List (age) on 10th December 1942 [illegible] Surgeon Captain but continued to serve in the rank of Surgeon [illegible] 1946.

[illegible] Lieut-Col Ronald Wallace Burton served in H M S *Victory* [illegible] Royal Marine Base and was awarded the *O B E* in 1919 for [illegible] these appointments. During World War II he served at Gibraltar [illegible] Medical Officer and at the I M S Hospital Mearnskirk as Liason Medical [illegible]

[illegible] M H JENNETT R N (Retd) died on the 13th October 1952. Born on [illegible] 1867 he qualified in 1891 and entered the R N Medical Service as [illegible] in May 1892. He was promoted to Staff Surgeon in May 1902 [illegible] Surgeon in May 1908 and was placed on the Retired List (age) on 1st January 1921 [illegible] Surgeon Captain.

In 1913 Staff Surgeon [illegible] was admitted as an Honorary Serving Brother of the Order of the Hospital of St John of Jerusalem in England and in 1926 was appointed a Knight [illegible] Order. During World War I he served in H M S *Blake* and *Hawke*.

Surgeon Captain [illegible] was much engaged in the welfare of the men in the Sick Berth Petty Officers' [illegible] of his death. By his energies foresight and influence a [illegible] Department of the Royal Naval Medical Officers was formed in 1933 under the [illegible] Admiralty Instructions as an advisory council to the Vesterdians of H.M. Sick Berth Staff [illegible] Branch of Sick Berth Petty Officers) of the three Departmental Ports and the [illegible] and improvement as trained and experienced male nurses [illegible] to be [illegible] interment in civil life after twelve or twenty years [illegible]

[illegible] Surgeon Captain Knapp [illegible] ... the Royal [illegible] ... of the men of the [illegible] ... Sick Berth [illegible] ... 1905 [illegible] ... Sick Berth Ratings [illegible] ... Sick Berth Service [illegible] ... although [illegible] ... the fulfilment of a suggestion made [illegible] ... Ministry of Health. Unfortunately [illegible] ... Surgeon Captain Knapp [illegible]

[illegible] R.N. (Ret.) [illegible] 1891 [illegible] 1898 [illegible] 1913 [illegible]

During World War [illegible] H.M.S. [illegible]

Surgeon Commander W. [illegible] R.N. (Ret.) [illegible] 1878 [illegible] in 1899 and [illegible] R.N. [illegible] February 1900. He was promoted to Staff Surgeon [illegible] February 1914 and [illegible] Retired [illegible] 1920.

During the First World War Surgeon Commander [illegible] H.M.S. [illegible]

HONOURS AND AWARDS

Knight of the Order of the British Empire

[illegible] Mackenzie, C.B., B.M., B.Ch., M.R.C.S., [illegible]

Companion of the Order of the Bath

Surgeon Rear-Admiral [illegible] D'Arcy, C.B.E., F.R.C.P.&S., D.O.M.S., O.H.S.

Officer of the Order of the British Empire

Surgeon Commander (D) W. [illegible] Mountain, L.D.S.

Member of the Order of the British Empire

[illegible] Chapman, R.N. (Ret.)

British Empire Medal

...or James W. Jack, C.M.X.[illegible]

Mentioned in Despatches

...Rutherford, M.D., S.[illegible], M.B.E., D.S.O.

Member of the Royal Victorian Order

Miss E. [illegible] VARNEY.
Miss D. [illegible] VARNEY.

PROMOTIONS

To Surgeon Rear-Admiral (L)—T. R. P. Williams, *C.B.I.*, O.B.E.

To Surgeon Captain—[illegible] H. Duthie, J. W. Walker, *D.S.O.*, [illegible]

To Surgeon Commander—[illegible] S. J. Becombe, J. V. M. [illegible]

To Surgeon Commander (D)—[illegible] S. Marshall, W. F. Straike.

To Acting Surgeon Commander—A. J. Barrett, J. F. M[illegible]

To Surgeon Lieutenant-Commander (D)—J. D. O. Rattledge.

TRANSFERS TO PERMANENT LIST

...Lieutenants J. V. Dolkin, J. D. Stewart, P. W. Heal.

ENTERED FOR SHORT SERVICE COMMISSION

[illegible] W. [illegible] Weeks, M.R.C.S., L.R.C.P., I. Patrick, M.B., Ch.B., D.O.H., [illegible], M.B., Ch.B., M.R.C.S., L.R.C.P., M. J. Bawcett, L.D.S.

RETIREMENTS

...Commander (E) W. Hann, Acting Interim Surgeon Commander K. G. O. Gr[illegible]
...Lieutenant-Commander R. W. Simpson.

WARDMASTER OFFICERS

PROMOTIONS

To [illegible] Lieutenant—J. I. A. Simpson, I. D. Jarrett.
To [illegible] Wardmaster—S. Owens, S.B.C.I.O., C/MX 48979.

RETIREMENTS

[illegible] Lieutenant V. Corrie, Commissioned Wardmaster H. F. M. Jones.

ROYAL NAVAL VOLUNTEER RESERVE

PROMOTIONS

To [illegible] Commander—D. F. Heath, T. B. Stull, V.R.D., W. S. Parker.
To [illegible] Commander (D)—J. Symons.

ADMIRALTY FLEET ORDERS

3207 —Medical—Communicable and Industrial Diseases—Notification.

3315 Dental Stores—Mercury and Surplus Dental Amalgam Salvage

3353 —Medical—Communicable and Industrial Diseases—Notification

3354.—Medical, Dental and Hospital Consultants.

3429 —Medical—Documentation—Introduction of New System

3545 —Forms—S 1274—Medical and Dental Treatment in Eire and Channel Islands—Revision

3570 Medical—N.A.A.F.I. Canteen Staff Employed in H.M. Ships and Naval Establishments—Certificates of Employment—Medical Notations

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3633 —Medical—Artificial Respiration Manual Method

3700 —Dental—Consulting Dental Surgeons—Action if Services are Required in an Emergency.

3707 —Surgeons and Agents

3724 —Naval Stores—General Electrical—Dental Surgery Lamp Fitting—Glasses for

3733.—Books—Miscellaneous Publications—International Statistical Classification of Diseases, Injuries and Causes of Death, 1948—Volumes 1 and 2

JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE
ANNUAL REPORT, 1952

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VOLUME XXXIX SUMMER 1943 No 2

Journal of the Royal Naval Medical Service

Articles

"HASLAR"

THE bi-centenary of the Royal Hospital Haslar will be celebrated on 26th June 1943 and a few notes on the history of the hospital may be of interest to our readers.

The first proposal for the building of a hospital for the treatment of sick and wounded seamen was made in 1666 during the second Dutch war but then as now it was difficult to persuade the Treasury to spend money until it was not until seventy nine years later that further attempts proved successful. In 1745 work commenced on the Royal Hospital at Haselmil Pointe—a strip of land lying between Alverstoke lake and the sea overlooking Spithead and the Isle of Wight. The architect was one John Fulmer.

It is recorded that the bricks used were made from clay found on the spot. The foundations were of great strength having walls four feet thick and a double tier of brick arches to give support to the superstructure. The building was modelled on Greenwich Palace with a frontage of 907 feet and two wings extending back for a distance of 543 feet. The wings were arranged on the modified block system and comprised a double row of buildings one inside the other with arched covered ways opening into the central airing ground. The original petition called for a hospital capable of receiving 1 500 patients but on completion in 1762 there was ward space for 1 800 (allowing each patient 600 cu. ft. of air) and during the Crimean war as many as 2 000 were accommodated. The original estimate of the cost was £38 000 but this figure was far exceeded when only the main frontage had been completed—estimating was apparently as difficult for the works department then as now.

The wards were officially opened in 1759 but the first medical officer Dr George Cuthbert was appointed in 1713. Sanction was given for the admission of patients the first contract for victualling was made in October 1713 and there are records of patients having been admitted in that year. The main building was not fully completed until the year 1762 by which time the Church of St. Luke was also completed on the South West side of the airing ground. The Royal Hospital Plymouth although started later (1758) was completed in the same year—1762.

Since then many additions have been made—the terrace in 1796 the museum and library in 1827 with a pathological section added in 1903 laboratory in 1899 medical officers mess and nursing sisters quarters in

1891 symbolus 1902 illness patients library [illegible] Errol Hall the gift of a fourth patient Cumberland Ward in 1913 the [illegible] berth staff quarters presented by the women of Gosport in 1917 the Occupational therapeutic department gift of the children of the Edinburgh and [illegible] Schools in 1918 and patients lounge 1924

The museum and library grew up together A very fine collection of approximately 12 890 geological botanical zoological and pathological specimens and some 6 700 books had been collected before the disastrous bomb wrecked the building in 1870 Few of the specimens survived but fortunately the books were saved these included such valuable works as Hippocrates Medicorum Omnium 1564 Albinus Anatomy 1710 the works of Dr Lind Goulds Birds of Asia New Guinea and Australia the scientific voyage of H M S *Challenger* in 50 volumes an Arabic work said to be the Koran The History of the World by Sir Walter Raleigh

Medical and administrative duties were undertaken at first entirely by the medical staff The staff consisted of a physician (the P M O or W O I C) a surgeon one or more assistant surgeons an apothecary the matron a chaplain and a steward The salary of the physician was £200 p a that of the surgeon £150 and of the chief assistant surgeon £91

The arrangement of mingling administrative control in the hands of the medical staff worked well for a number of years especially under the able control of Dr James Lind who held office from 1758 to 1783 Later however a lack of discipline and the abuses that were practised led to an Order in Council of 1795 by which Post Captains of the R N were appointed as supreme heads of the hospitals Executive officers ruled until 1860 when medical officers were restored to full control

The irregularities and abuses which led to the Order in Council of 1795 were due principally to the difficult circumstances of the times The majority of sailors were pressganged and their one ambition was to get away On shipboard they had little opportunity but in hospital it was comparatively easy In 1795 twenty five men escaped in a single week some by way of the sewer into Haslar creek others disguised as nurses During that year 188 men were Discharged Run Seamen from near by Fort Monckton were joined along the walls but never in effective numbers Furthermore they were accused of passing bottles of rum and gin over to the patients within Government funds and stores disappeared liquor was frequently smuggled drunkenness was rife and petty crime was rampant In October 1795 the gin porter estimated that on an average he seized two or three gallons of gin a month but it sometimes ran to five or six gallons generally more in winter than in summer June 1796 Received estimate for making the outlet of the common Boghouse so secure as to prevent the introduction of liquor by that channel into the hospital £7 12s

The doctors lived outside the hospital and often neglected official duties in their eagerness to supplement their meagre salaries by private practice a privilege which was stopped at this time

It may well be imagined that the regime from 1795 to 1860 was not a

[illegible] The executive officers with their [illegible] watch on all that was done followed the doctors through the [illegible] quarrying, all the patients if treatment was satisfactory and sometimes interfering with the treatment In this respect we have a first hand account in the Journal of July 1916 from Major General John B Richardson son of Sir John Richardson physician in Haslar 1838 to 1855 Major General Richardson lived in No 2 Residence during his father's tenure of office and when he revisited Haslar in 1916 at the age of 79 he was able to recall memories of conditions in the hospital during his childhood— The Haslar Hospital of my father's time was governed in a different fashion to what it is now It was then treated more as if it was a man of war than an institution for the amelioration of sickness wounds and suffering A Captain and two old Lieutenants R N ruled or endeavoured to rule the roost the former very particular about his dignity When the Captain Superintendent left the Hospital the big iron gates were thrown open He marched out Everybody in sight touched their hats and it soon spread abroad that the great man was out There was fairly constant friction between the fighting and the healing forces—chiefly I think because the Captain and his Lieutenants made sorties into the wards and domains of the medical staffs sorties which were not always beneficial to the patients or because the Captain would send for the Medical Officers in a body to his office to hear his wisdom when they were busy with visits operations post mortems or instruction But though the governing system remained the same all friction disappeared when Sir Edward Parry the great Arctic explorer became Captain Superintendent He was a most genial man and very tactful so that very soon the most excellent relations existed between him and the officers of the medical staff He effected considerable reforms in consultation with the staff—united one and all in Haslar loved him and his family Haslar became a different place officially and socially

The so called nursing staff was originally drawn from naval pensioners labourers and women usually the widows of sailors or marines The women were apparently from the lowest walks of life unfurnished underfed underclad and of weak morals 12th December 1771 'Received a letter from the Commissioners of Sick and Hurt desiring to know whether proper nurses could be provided at 6s a week each In 1710 the Council was ordered to see that the nurses discontinued the practice of taking the dead man's shirt and later a similar order respecting the silver buckles from their shoes June 1757 Who this day enquired why they (the nurses) are so desirous of quitting and had that they complain in general of their being confined and imprisoned and that they never eat a hot meal nor served with scraps left by the seamen and that they are badly paid for having a trifle of wages when perhaps there is three or four months due In 1763 complaints were made that the nurses were stealing the poultice bread and that Chemist Hurt had for months concealed her mother in her cabin

It was in 1887 that a naval Sick Berth staff of 484 men was established and in the same year 17 Queen's lady nurses were enrolled in the Navy

The Queen Alexandra Royal Naval Nursing Service came into being in 1902

The early days of Haslar were full of interest The principal diseases at that time were fevers and scurvy and the story of the naval medical service and the Royal Hospitals is inevitably closely associated with the battle against these diseases Blane's table of admissions to Haslar under the care of the physician in 1780 gives the following figures Fevers 2 072 Scurvy 1 457 out of a total of 8 143 admissions The mortality rate was very high and it is recorded that 1 in 13 died this same year In the two years 1779–1780 there were 1 716 burials

The nineteenth century was one of continuous improvement and reform both in conditions at sea and in the Royal Hospitals whilst the earlier recommendations of Lind and Blane were slowly but surely being implemented The system of impressment ceased voluntary recruitment was introduced and wars were less frequent Commanding Officers were instructed to make regular inspections of the living quarters and to pay special attention to cleanliness Soap was provided for the use of sailors and marines Storage of drinking water was improved Rations were increased and the victualling arrangements reorganized Better arrangements were made for the sick and wounded on board ship and medical comforts were introduced Then the introduction of steam had a profound effect upon the general health and well being of the sailor

Conditions in hospital had so much improved in 1869 that the Civil Commission set up to enquire into the conditions and organization of Naval Hospitals was able to conclude its report to Parliament with these words

"Their medical arrangements are in all respects admirable and such as voluntary foundations would willingly copy if their circumstances permitted Humanity the duties resumed control and have proved themselves worthy"

The record of Haslar in the two world wars of the twentieth century was second to none and the good work goes on in this famous old building During the past 200 years great men doctors scientists explorers naturalists have served on the staff The Royal Naval Medical Service can be proud of its traditions and send salutations to all who are serving there as the third century rolls on

We are indebted to Mr S L Barrington of the Records Office Haslar for some of the notes and to R S Allison M D M B F R C P (Surgeon Captain (Retd) R N V R) for permission to quote from his excellent book Sea Diseases —the story of a great natural experiment in preventive medicine in the R N John Bale Medical Publications 1943

A CLINICAL SURVEY OF ACUTE HEPATITIS IN A ROYAL NAVAL HOSPITAL IN WARTIME

BY

Surgeon Commander F. P. ELLIS, R.N., *O.B.E.*

DURING the First World War (1914–1918) epidemic jaundice in acute hepatitis occurred in cycles which followed epidemics of enteric disorders and largely because of this the concept of catarrhal jaundice was accepted.

The picture during the 1939–1945 War was very different. The enteric infections were in the main controlled by immunization, chemotherapy and hygienic precautions. But infective jaundice flourished on a larger scale than in the previous struggle despite the absence of those conditions which had been considered formerly to contribute to catarrh of the intestinal mucosa and an obstructive ascending catarrh of the bile passages. This contrast is reflected in fig. 1 in the figures for hospital admissions to the Royal Naval Hospital at Haslar derived from the hospital records for the first four years of these two wars. The very suggestive association between the jaundice, typhoid and dysentery admissions rates during 1917 is discounted by the complete lack of such an association between 1939 and 1943 during which years the incidence of hospital admissions with acute hepatitis increased steadily without any marked difference in the incidence of the other two disorders. This does not dispose of the very real possibilities that if infective hepatitis is spread by faecal contamination or infection mainly by the ingestion of infected material, epidemics of enteric diseases will be associated with an increased incidence of hepatitis in that a damaged or inflamed gastric or intestinal mucosa may be more susceptible to infection than a healthy one, but it does appear to eliminate an inflammatory disorder of the intestines as the essential basis of the condition.

Towards the end of 1942 the increasing prominence of jaundiced patients in the wards of Haslar caused the hospital authorities to enquire why the increase was occurring, whether infective and serum therapy hepatitis were the same disease, and if so whether those infected were likely to infect others? During the last eight months of 1943 all cases, whether they occurred during serotherapy or not, were isolated in one ward and treated and observed according to a standard regime with the aim of studying these problems.

The clinical features which were observed add nothing new to the picture which may be drawn from other accounts which have accumulated during the last ten years. Epidemic infective hepatitis is essentially a wartime disease and does not usually figure dramatically in peacetime practice. There is no

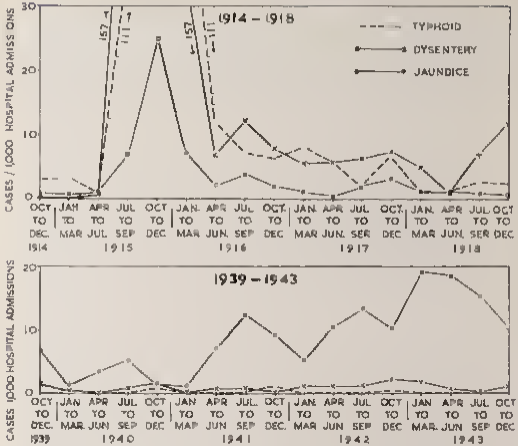


FIG. 1.—Quarterly incidence of typhoid, dysentery and jaundice admissions in the Royal Naval Hospital at Haslar during the First and Second World Wars

specific treatment. The great majority of patients recover with rest in bed and a balanced diet. It is tempting to forget that it was a devastating cause of casualties in the Mediterranean during the critical years of the 1939–1945 War (Cullinane, 1952) and that a larger epidemic was feared by many. Although Havens (1952) has drawn attention recently to the high incidence amongst United States occupation forces in Germany in 1946 and more recently in Korea.

Despite the considerable research work which has been carried out there is still doubt as to whether one or more viruses cause acute epidemic hepatitis. The reason why some patients succumb in a few days with massive liver necrosis in violent contrast with the very much more usual picture of a frequently unpleasant but relatively mild illness is obscure. The attack on this disease now is mainly through the laboratory and centres on the search for a suitable experimental animal and techniques for culturing the virus; but perhaps there is still room to record the clinical features of this disorder as it occurred in the human animal in a naval hospital in wartime.

[illegible] HOSPITAL MATERIAL

All [illegible] jaundice in the Navy were [illegible] the Weekly Returns [illegible] onwards. Neither the [illegible] nor the rates obtained from these returns give a fully [illegible] of the true incidence but it would appear in fig. 2 that the monthly incidence of arsenotherapy hepatitis and the monthly incidence of infective hepatitis for hospital admissions to Haslar during the last six months of 1943 were similar to those for the rest of the Navy. However whereas the majority of infective hepatitis patients in the Portsmouth Area were admitted to this hospital many mild cases of jaundice were retained as outpatients of the venereal disease clinics as the treatment of active syphilis was considered to be more important than the treatment of mild hepatitis which would put the incidence of arsenotherapy hepatitis in Portsmouth considerably higher than that for the rest of the Navy. This is probably correct as Portsmouth was one of the main centres for the treatment of syphilis. No cases of acute hepatitis due to yellow fever vaccine inoculation were reported at Haslar during the first four years of the war.

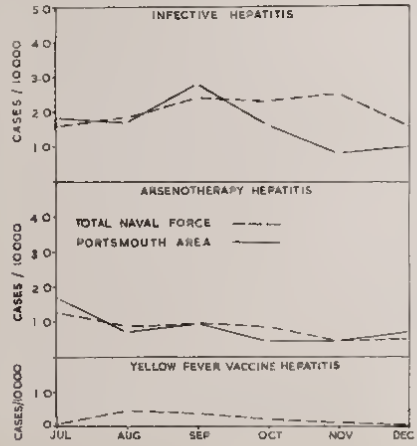


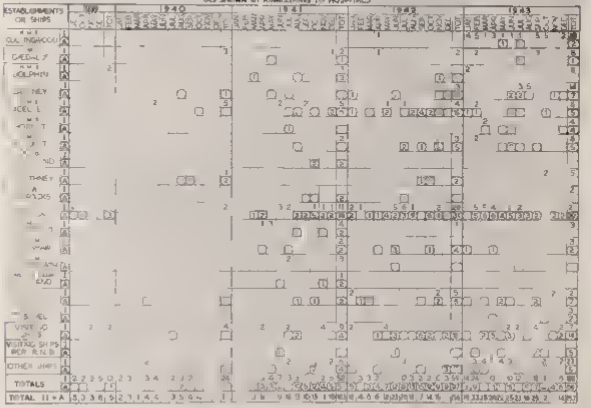
Fig. 2.—Hepatitis rates for Total naval force* and for the Portsmouth area only between July and December 1943.

(* Cases notified to Admiralty.)

Nevertheless it is of interest to note in Table I that chronologically the numbers admitted from the larger establishments with infective hepatitis and arsenotherapy hepatitis did bear an approximate relation to each other during the first three years of the war although the arsenotherapy cases outnumbered those with infective hepatitis during 1942 only to decline during 1943 and particularly towards the end of that year as the dangers of syringe transmission were appreciated and steps were taken to avert these. The wide dissemination of isolated cases throughout the area seemed consistent with the view current at that time that this infection was usually spread by air borne particles or droplets

TABLE I

INFECTIVE (H) AND ARSENOTHERAPY (A) HEPATITIS CASE INCIDENCE IN THE NAVAL MALE COMMUNITY IN THE PORTSMOUTH AREA 1939—1943. (AS SHOWN BY ADMISSIONS TO HOSPITAL)



The [illegible] literature of infective hepatitis at Haslar and the possibility of rubrum Addis-Oxy coli sodium might stimulate being an immediate to treat or spread of the [illegible] have been reported elsewhere (Ellis 1941)

The Clinical Features

The severity of acute hepatitis at this hospital during 1943 ranged from transient asymptomatic jaundice to acute illness culminating in death within three days of admission. On the average infective hepatitis patients

remained in hospital [illegible] eight days whilst for the [illegible] spent in hospital were thirty and [illegible] spent in hospital during [illegible] only during convalescent treatment rather than to treat [illegible] of the illness.

From April 1943 onwards [illegible] patients in either group were confined to bed on opposite sides of [illegible] until their urine was albumin free, their skin and conjunctivæ appeared normal and bile pigments had been absent from the urine for three [illegible] before a stretcher allowed to get up gradually [illegible] leave as a routine [illegible] The criterion for hospital duty was supplemented [illegible] with a test of daily [illegible] or with breakfast [illegible] when albuminuria [illegible] were involved but [illegible] these cases [illegible] usually the most [illegible] weight which in hospital [illegible] due to [illegible] level obstinate.

Patients under treatment [illegible] were [illegible] with pregnant [illegible] were [illegible] were treated in all the patients were in an advanced stage of treatment with [illegible] this diversion was risen than it might have been [illegible]

Symptoms.—All these patients were [illegible] whilst under observation. The prodromal period [illegible] the presence of jaundice was recognized [illegible] of either a cold in the head, gastro-intestinal [illegible] loss of appetite and lassitude was less than a week in [illegible] during 1941 (Table II)

Table II. Percentage [illegible] Jaundice [illegible] Size

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Prodromal period	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Infective hepatitis (cases)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Serum therapy hepatitis (% cases)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Nearly all the patients had [illegible] symptoms [illegible] the relative prevalence of these [illegible] groups after April 1943 [illegible] summarized in Table III together with Williams (1941) findings [illegible] consistent with the view generally [illegible] simple [illegible] and serum therapy hepatitis are indistinguishable. After [illegible] it is the symptom most frequently reported by the [illegible] patient [illegible] whom continued to complain of the [illegible] the [illegible] had completely subsided and it was at times accompanied by [illegible] variety of varying severity. Other [illegible] of mental symptoms [illegible] retrobulbar pain were [illegible] rarely than the [illegible] approximately equal proportions of the two groups complained [illegible]

TABLE III—HISTORY OF MAIN SYMPTOMS AND PHYSICAL SIGNS

	Infective hepatitis			Arsenotherapy hepatitis			
	Naval Hospital, Plymouth, Series (%)	Plymouth Cases, Birth (%)	Cases, Cambridge (%)	Naval Hospital, Plymouth, Series (%)	Cases, Birth (%)	Cases, Cambridge (%)	
Vomiting	41·3	98·6	92·0	93·5	34·9	4·1	77·8
Diarrhœa	14·1	51·2	86·0	58·5	27·0	47·6	11·1
Abdominal pain or tenderness	11·2	32·9	74·1	77·5	28·6	47·1	88·8
Jaundice	44·0	30·7	74·7	28·0	38·4	95·5	88·8
Anorexia	38·4	30·4	68·6	91·5	31·8	23·8	88·8
Hepatomegaly	18·7	19·5	48·4	81·4*	81·7	12·1	88·8
Splenomegaly	20·9	17·2	47·1	46·0	22·2	1·5	31·8
Jaundice	18·4	6·9	58·6	11·0	7·9	6·1	14·3
Hepatomegaly	99·6	22·6	45·2	81·1	18·8	31·3	38·1
Splenomegaly	44·5	19·5	54·0	58·5	66·5	11·1	41·6
Hepatomegaly	19·1	11·6	40·7	17·0	27·0	8·0	34·9
Splenomegaly	12·1	11·6	34·7	15·0	14·3	4·8	19·0
Ascites	8·0	—	8·0	9·0	—	1·6	4·6
Hepatomegaly	46·9	14·0	34·9	31·5	77·0	6·4	33·3
Splenomegaly	29·9	11·5	34·6	38·5	15·9	12·7	28·6
Ascites	1·1	—	1·1	—	—	—	—
Hepatomegaly	16·3	7·5	43·8	13·0	14·3	5·4	17·5
Splenomegaly	6·1	1·0	9·0	10·0	8·7	—	6·7
Ascites		—	—	8·1	1·6	—	1·6
Number of cases			88	200		63	64

*Wilson (1951) †Not included

The symptoms and physical signs in the two groups were very similar. It was less easy to record the physical signs to enable a distinction to be made between the two groups. The course of the illness was prolonged in those suffering from infective hepatitis. In some the pre-icterus phase was prolonged and the illness was short. Hepatic enlargement was sometimes an early feature but appeared later in other cases. Some men had been retained in the sick quarters of their establishments or ships until jaundice was well developed or were well on the way to recovery by the time they were admitted to hospital.

Comparisons of the physical signs to be encountered in infective hepatitis in different countries are of interest. Cameron (1943) reported that about 57 per cent. of British troops in Palestine suffering with infective hepatitis had enlarged livers. He found that the enlargement was transient, lasting seven to fourteen days in most cases. Wilson (1951) found at Cambridge that 83 per cent. of patients exhibited enlargement of the liver at some time during the illness. (In the average case the cases of both these observers were probably seen in hospital at a rather later stage of the illness than these naval cases. On admission to Haslar 58 per cent. of patients with arsenotherapy hepatitis had clinically detectable enlargement of the liver as opposed to 42 per cent. of those with infective hepatitis. Generally speaking jaundice, bilirubinuria and hepatic enlargement persisted rather longer in the group with arsenotherapy hepatitis than in the group with infective hepatitis and abnormal liver enlargement was detectable in 30 per cent. after three weeks of illness (Table IV).

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] in the [illegible] arsenotherapy hepatitis and [illegible] function [illegible] by the [illegible] that of the infective hepatitis group and to a degree which [illegible] significant (P=[illegible]). The difference between the [illegible] values for the two groups was not significant. Estimations [illegible] the urine were of little value in distinguishing between the [illegible] in assessing the severity of the illness. The tendency [illegible] neutropenia reported during the icteric phase by Miles [illegible] both types of case, and again there was no significant difference [illegible] two groups. The results of the hippuric acid synthesis test [illegible] fig. 5 in relation to the duration of illness. If a value below [illegible] per cent of the normal excretion value was obtained initially the test was repeated after a week. The more numerous low excretion values during the acute phase of arsenotherapy hepatitis add support to the conclusion drawn from Table V that liver function was more impaired in this group of cases.

Night Vision.—The widespread disorganization of liver structure demonstrated by liver biopsy in cases of hepatitis (Dible, McMichael and Sherlock, 1943) suggested that impairment of night vision due to the disorganization of vitamin A metabolism (Haig, Hecht and Patek, 1938) might be a sequel to this condition also. In view of the importance of good night vision to naval lookouts and watchkeepers, men with moderate or severe hepatitis were tested by Surgeon Lieutenant D. I. Jackson, R.N.V.R., at the night vision laboratory of a submarine base near to the hospital. The patients were transported by stretcher and ambulance and were examined as soon as they were considered fit to make the short journey and to stand the test.

The essential findings (Ellis, 19[illegible]) will bear repetition. 7 out of 11 men with infective hepatitis and 8 out of 34 with arsenotherapy hepatitis had abnormally poor night vision during the acute phase of this illness. The average ability to synthesize hippuric acid after oral ingestion of sodium benzoate of 8 of these men whose night vision was abnormally poor was 2[illegible] per cent of normal before the night vision test, whilst for 18 whose night vision was within the normal range it was [illegible]9 per cent. 2 out of 4 men with poor night vision who were retested two or three months later had recovered sufficiently to be classified as normal. The other 2 were still abnormal. The mean hippuric acid synthesis for these 4 men before their first night vision test was only [illegible] per cent normal (47, [illegible]9, 4[illegible], 38 per cent respectively), but when they were retested after intervals of three to eight weeks it was [illegible] per cent ([illegible], 94, [illegible], 113 per cent respectively).

The defects in night vision were recognized by the patients themselves, and several complained when they were interviewed after convalescence that they had trouble in the dark, whilst one man who had been severely ill with infective hepatitis said he was practically useless at night.

Fatal Cases.—A foreign seaman aged [illegible], who spoke no English, died within three days of admission. He was admitted with acute abdominal pain, anorexia and constipation of three days' duration.

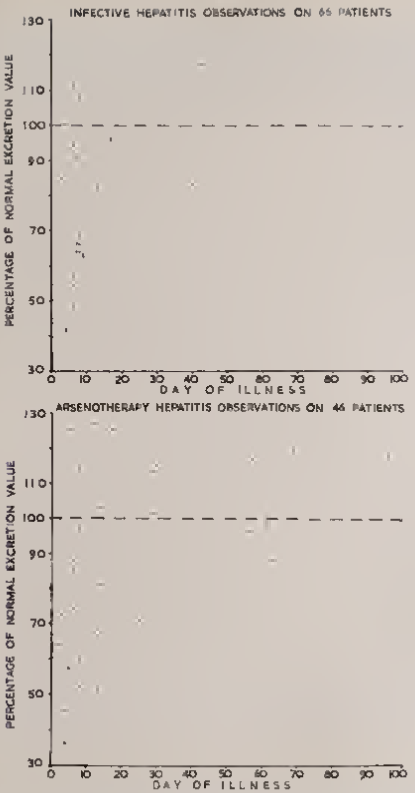


FIG. 3.—Urinary excretion of hippuric acid after oral ingestion of sodium benzoate in relation to duration of illness

[illegible] an injection of [illegible]oxide which had [illegible] for [illegible] of [illegible] injections for syphilis. He [illegible] [illegible] had been ill [illegible] enlarged and tender. His [illegible] [illegible] deepened and died [illegible] later [illegible] of the liver cells was found at autopsy and the [illegible] [illegible] presence [illegible] sections was [illegible] recognizable.

[illegible] men not included in the series described above had [illegible] probably supervening on previous liver damage associated with [illegible] syphilis and [illegible] therapy and with chronic alcoholism and [illegible] hepatitis in the [illegible]. Both had portal obstruction. The first case [illegible] died [illegible] month after admission to a general medical ward and [illegible] [illegible] and [illegible] paracentesis to drain ascites. At autopsy he had a [illegible] [illegible] with histological appearances suggestive of a supervening acute [illegible]. The second patient aged 45 was a relapsed case of infective hepatitis [illegible] desperately ill on admission with marked ascites and bronchitis. After repeated paracenteses (when 8½ and 17 litres of fluid were drained from the abdomen) restricted fluid intake by mouth, relief of the systemic [illegible] with continuous intravenous isotonic glucose infusions and [illegible] of [illegible] microcytic anaemia with large doses of iron and [illegible] he recovered sufficiently to undergo a [illegible] Talma-Morrison operation by Sir Cecil Wakeley. An effective portal-systemic anastomosis was established and despite post-operative pneumonia he recovered. The appearances of a biopsy specimen taken from the liver at operation suggested acute hepatitis supervening on a fine cirrhosis.

Discussion

Most of the cases described above were probably due to acute zonal [illegible] hepatitis according to the pathological classification proposed by Himsworth (1950). It was not possible to distinguish between [illegible] therapy hepatitis and infective hepatitis by clinical or laboratory methods. Wilson (1951) and Dible, McMichael and Sherlock (1943) were also unable to distinguish these two conditions by clinical or histological criteria. On the average men with arsenotherapy hepatitis were ill for longer periods and clinical and laboratory tests suggested that serious liver damage was [illegible] in this group, but this was probably because most of them had been receiving injections of hepatotoxic drugs for many weeks, over half of them [illegible] habitual consumers of alcohol, but only a small proportion of the [illegible] hepatitis cases, mild cases were frequently not sent to hospital and [illegible] of those who were admitted to hospital were experiencing their [illegible] attack of jaundice.

On the [illegible] available it appears reasonable to conclude that [illegible] arsenotherapy hepatitis and infective hepatitis were most [illegible] the same infective agent.

[illegible] the early years of the war a tendency to regard arsenotherapy [illegible] which did not merit isolation or at times even [illegible] had not to subordinate it entirely to the needs for treating the

syphilitic [illegible]. As far as the cases [illegible] to Huslar during 1913 are concerned [illegible] it is very apparent that the [illegible] with arsenotherapy hepatitis showed more marked signs of severe hepatic [illegible] and were on the average sent for [illegible] than the group [illegible] hepatitis. Furthermore the two patients who died were [illegible] belonged to the smaller arsenotherapy group. There is thus [illegible] to support that which regards the patient with human jaundice [illegible] from the treatment of syphilis with arsenical drugs (on the [illegible] [illegible] being a much more prolonged treatment for [illegible] and the shortest period after the last injection was 41 days).

The second reason why some cases with [illegible] hepatitis were not sent to hospital whilst [illegible] of their [illegible] hepatitis was that the former must be considered to be infectious before the [illegible] of the arsenical preparation is over. We now know that [illegible] infections may occur many days through the medium of [illegible] procedures requiring skin puncture or venepuncture, but it is [illegible] that arsenotherapy cases were infectious otherwise.

The volume of evidence that the most [illegible] infection is faecal oral is growing all the [illegible] this infection is carried by no [illegible] Experimental hepatitis in human volunteers by the ingestion of [illegible] has been successfully effected by Macfallum (1941) [illegible] appears that there is little or no virus present in the [illegible] of patients with infective hepatitis during the [illegible] stages. It is generally believed that the infective [illegible] important routes of transmission and personal [illegible] of exchange and later. Although [illegible] by way of contaminated syringes or needles is known, the [illegible] course of disease with its sudden onset [illegible] suggests that this was not an important [illegible] short like that experienced with hepatitis [illegible] found susceptible young adults into [illegible] where [illegible] where certain of the conditions favourable to [illegible] fulfilled. The case for faecal oral spread is strengthened [illegible] report by Capps and Stokes (1942) of epidemic hepatitis [illegible] who were looking after children patients under [illegible] outbreak when the nurses were taught to take [illegible] handling their boy patients and then clothing and [illegible] also drew attention to the probability that [illegible] unsuspected reservoirs of infection. More recently [illegible] and Havens (1943) describe an outbreak due to [illegible] infective hepatitis and Langdon Stokes and Schrek (1943) describe an outbreak due to well water from the [illegible]

Hospital infections were not observed at Huslar [illegible] to the [illegible] hepatitis mind. In the light of the recent prominence given to the faecal oral path of infection this reflects favourably on the hygiene precautions of the

nursing and laboratory staffs who were in close and repeated contact with the patients during this investigation but a contributory factor was that many of the cases were past the stage when they were most likely to be infectious when they were admitted to the hospital

There is also another possible explanation of the immunity of the nursing staff In cases infected by the ingestion of feculent material it is to be expected that the excreta will be infectious for others However in the case of patients who are infected parenterally either by the intravenous subcutaneous or intramuscular routes there is no reason why the bowel lumen should become infected unless the infective agent is excreted from the liver in the bile and there is no proof at present that this occurs It is therefore possible that parenterally acquired infections may remain as closed infections unless they are transmitted by infected blood If this is so all the arsenotherapy hepatitis cases and if the assumption made elsewhere (Ellis 1942) that T A B or T A B T inoculation procedures may also be incriminated is correct some of the infective hepatitis cases would be closed cases of hepatitis They would not be a menace to other patients around them unless they were subjected to venepuncture or subcutaneous puncture and the syringes and needles were inadequately sterilized before they were used again on uninoculated patients It would be of value to verify whether or not the toxogenic agent is excreted in bile

Summary

A clinical comparison of cases of infective hepatitis and arsenotherapy hepatitis was carried out at the Royal Naval Hospital at Haslar during the last eight months of 1943

It was not possible to distinguish between infective hepatitis and arsenotherapy hepatitis by clinical criteria The latter cases were in hospital longer on the average and were more severely ill but this can be explained adequately by the aggravating circumstances referred to above

Attention is drawn to the possibility that impairment of night vision may be an acute sequel of disorganization of vitamin A metabolism in the liver and may be a residual feature when clinical recovery is otherwise complete

It is suggested that unless the hepatitis virus is excreted in the bile which has not yet been shown to occur infective hepatitis in patients who are infected by parenteral routes may be a closed infection provided parenteral transmission can be avoided

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THE MONTE BELLO EXPEDITION

BY

Surgeon Lieutenant P D G PUGH, R N

It would seem that there could be no possible excuse for adding [illegible] historic occasion to ship by without submitting some record of it to the Journal. Yet I must confess that I have hesitated for some considerable time before applying pen to paper simply because, apart from matters already related to the weapon very little occurred of real medical interest. There were, most fortunately, the minimum of accidents; nothing in the way of epidemics, no strange or outbreak of diseases, and yet life for them [illegible] shall always seem to hold some first excitement. And so my excuse for the article must simply be that I feel that a brief sketch of the life we led, some of the problems we encountered, and some of the amusing incidents that came our way, may be of interest.

As a result of the security in connexion with the expedition I was told very little before we sailed from Portsmouth on 19th February 1945. I was however given a relatively free hand and every opportunity with regard to obtaining stores, and on account of the uncertainty of what was going to be required of me I had in a fairly liberal selection. Two LSTs were in this initial phase, *Narvik* which carried an SBV in addition to myself, and *Zebrugge* which carried an LSBV. These two together with *Iraklion* which joined us later at the Monte Bello formed the 4th Landing Ship Squadron under the command of Captain C. C. Colville, *CBE*, RN.

In addition to these mounted complements *Narvik* and *Zebrugge* carried about two hundred army officers and men between the two ships. The army

personnel consisted of the men of Royal Engineers [illegible] but there were in addition [illegible] belonging to R.E.M.E. [illegible] one officer and thirty Royal Marines and *Zeebrugge* [illegible] Marines. The tank space of both vessels were crammed [illegible] housed ashore by the sappers. They presented a most [illegible]. There were numerous [illegible] enormous packing cases [illegible] land rovers [illegible] cranes, cement mixers and [illegible] ungainly pieces of machinery called R.B.19's which seem to [illegible] of the engineering world. They lift things up, put things down, push things, pull things and generally [illegible]. Then there were large quantities of corrugated iron, Nissen huts, timber, piping and [illegible] which all seemed to [illegible] of [illegible] being either [illegible] or of a curious shape.

Our journey out was far from comfortable. At the slightest [illegible] pitch, shudder and [illegible] everything except [illegible]. In addition such vessels would seem to be quite unsuited to the tropics. [illegible] each ship lies on the [illegible] and starboard [illegible]. [illegible] *Zeebrugge* the sick bay is absolutely [illegible] for the purpose for which it is intended. [illegible] we had [illegible] there were [illegible] on the upper deck.

At Colombo some of us witnessed the state funeral of the late Prime Minister, Mr. Senanayake. [illegible] described [illegible] The final ceremony in which the huge funeral pyre [illegible] dusk is a sight I shall never forget. It glowed like a gigantic [illegible] for fully ten minutes until the flames finally devoured the [illegible] framework and the entire structure slowly collapsed. As it did so the flames shot skyward accompanied by showers of sparks.

At the Cocos Islands where we stayed for a couple of days we first met the Australians. [illegible] of the No. 2 A.C.S., R.A.A.F. [illegible] busy preparing the airstrip on West Island for the new air route between Australia and South Africa. Our visit was unfortunately marred by a bathing accident. Several [illegible] approached too close to the reef, got sucked [illegible] into the open sea by the huge breakers and were then unable to get back. The Australians showed the most supreme gallantry in rescuing all but one, but [illegible] lost two of their own number. Some awards including a George Medal have subsequently been made in connexion with this tragedy. The Australians had [illegible] attractive little hospital near the airstrip which was closed down after the construction work had been completed. It was staffed by [illegible] two nursing sisters and several orderlies.

We arrived at Fremantle on 6th April, left for the Islands eight days later, arriving on 28th and entered the lagoon on the following day. It had been a long and trying journey out and everyone was now straining at the leash to get on with the job. There was an extremely tight programme of construction work ashore to be completed by the time *Campania* arrived but before this could be commenced the ships had to be unloaded and the equip-

[illegible]. We then [illegible] which entered [illegible] and [illegible] extending [illegible]. It was [illegible] and [illegible] and [illegible] and [illegible] completed [illegible] the [illegible]

[illegible] must [illegible] [illegible] which [illegible] [illegible] [illegible] which [illegible] [illegible] [illegible]

mixed and extensive [illegible] I feel the [illegible] work in connexion with it will bound me to my living by !

It would not be appropriate [illegible] to burden you with too much detail about The Monte Bello Islands as they were affectionately called by some (and even after) we were allowed to name them by name the Goubitch Isles (G D I) Let them be nameless however these islands are nothing like what the photographs would suggest to them nevertheless would imply Many of us did in fact develop a very slight smarting affection for them although none of us would confess to it There has been a great deal of discussion in the Press about the original discovery of the islands but it appears that although perhaps not first on the scene at any rate the first to put the Islands on the map was the French navigator Bouchet He named the islands after what was then a recent French victory in the Napoleonic wars at Monte Bello in Northern Italy In this connexion I must tell of how on one way back I visited Melbourne and got into conversation with a resident Where do you come from ? he inquired Australia I replied It must be odd there at this time of year he remarked No it is a ship in harbour said I Where has it come from ? The Monte Bellos Ah yes that is the village on a hill in Northern Italy I suppose we have developed a distorted idea of our importance ! I never discovered who named two of the islands Trimouille and Hermite but these are old names and can be found in the larger atlases Most of the names we used were given to the islands by Commander D P Willan DSC RN He gave flowers to the islands viz Pansy Violet Rose and Dahlia Prime Ministers to the points Churchill Attlee and Disraeli etc drinks to the bays sherry vermouth rum claret etc scientists to the channels for instance Faraday and Kelvin

There are close on a hundred islands in the group which is spread over 77 square miles Some of the islands for instance Hermite and Trimouille are very much larger than others There is a central lagoon and a coral reef flanks the western coast of the islands Much of the waters about the islands are shallow and studded with niggerheads The islands themselves are low lying consist in the main of a coral lime stone which is a darkish grey in colour and very like lava in appearance sand and spinifex grass They are in fact a lot less terrifying than all that sounds They are green to look at and although in the main this is due to spinifex there is an extraordinary selection of wild flowers many of which are very beautiful Here and there was a mangrove swamp which was always a hum of activity especially from the bird life of the islands There are in fact several species of bird life such as the spinifex bird which are found only very occasionally elsewhere I believe however that I am correct in stating that there is not a single bird known in the Islands that is not found in at least one other place for instance Barrow Island Trimouille and one or two of the other islands abound with rats Hermite with wild domesticated cats Both are believed to have originated from shipwrecks There is a wide range of reptile life Only two different snakes had ever been described before but we collected two further specimens which appeared to be different and are being examined by the

British Museum [illegible] Lizards [illegible] Iguana [illegible] (*Varanus Bivittatus*) a humble equivalent [illegible] Australian Water Lizard. It can be recognized by its [illegible] and its very long tail. [illegible] of course a torch [illegible]

There is no [illegible] where the wild life get the [illegible] which was very heavy in the early [illegible] definitely mosquitoes [illegible] yet been identified. [illegible] of the expedition they really [illegible] became quite resistant [illegible] they seemed to thrive on [illegible] flies were seen. [illegible]

The lagoon and more [illegible] in fish of all descriptions. [illegible] various species of Tuna but Skipjack, Coral, Striped, Yellow Fin and Golden were all plentiful. The lagoon [illegible] with sharks as was very well demonstrated [illegible] when a member of the [illegible] Tiger shark whilst [illegible] stern. Subsequently [illegible] to determine who could first [illegible] number were caught including [illegible] Dusky sharks. Doubtless many other [illegible] several species of sea snake all [illegible] varieties. They never showed any tendency to attack [illegible] Australia who had ever had to [illegible] particularly lethal fish called the [illegible] most venomous fish in the world [illegible] rather unlovable ship and very [illegible] As such it is quite easily [illegible] unfortunate to place his foot upon one of [illegible] of the fish. Intolerable pain [illegible] thrash frequently [illegible] many months before [illegible] Throughout the operation although [illegible] pricks from fish spines. [illegible]

And so the world of [illegible] work showed their rewarding [illegible] appreciated that [illegible] Suppers to the various [illegible] Royal Marines who manned [illegible] on the native [illegible] up on one of the islands [illegible] mighty Suppus lived. [illegible]

From the medical angle during these early days we were most fortunate There was a comfortable amount of work but we were at no time hard pressed The main object had to be to keep as many of the Snippers as possible on the job The difficulties were that in order to get them to the various island sites Landing craft left the ships at first light or even before If a man had to stay behind for treatment it might mean that his arrival at work would be delayed for as much as half a day or even more In this connexion the sealing of coral cuts and abrasions with elastoplast undoubtedly saved many man hours The procedure was to clean the abrasion or sore with ether and apply encircling elastoplast direct The patient was then told to return in ten days time but warned that if he experienced pain or irritation under the plaster he was to report earlier At the end of ten days depending on the particular circumstances the wound was either healed or more commonly presented a rather red angry sore bathed in pus One reassuring feature was that if there had been a tendency to ulceration before the surface would now be flush with the surrounding skin If now after toilet with ether elastoplast was reapplied it was generally found that healing had occurred in eight days This form of treatment need not necessarily be given up if the patient returns earlier than the usual ten days In a large proportion of such cases the removal of the plaster toilet and reapplication will do the trick We had our failures it is true but they constituted less than 5 per cent of the total Such treatment had three advantages (1) The patient only had to attend two or three times *in toto* Many working hours were thus gained for each patient (2) He could work ashore and in water without worrying about his dressing The ordinary bandage with flavine dressing invariably became full of sand and soaking wet within a few hours of arrival at the site (3) In spite of the price of elastoplast I am convinced the method must be cheaper than methods involving daily dressings

So far as possible I tried to visit each of the island sites twice a week but this was not always possible because of odd things constantly turning up The policy was for me to visit a patient ashore rather than for him to visit me in this way he wasted less time and I could deal with any other matters that might have cropped up there Every landing craft and launch was on boat work This was invaluable as it was always possible to get in touch with me quickly

The unlooked for had only just been completed when our first disaster over took us in the form of a stone in the left kidney of *Zeebrugge's* 1st S B A accompanied by profuse hæmaturia He was sent to Perth and invalided home His relief had not left the United Kingdom when *Narvik's* S B A sustained a most unpleasant fracture of the shaft of his right tibia and fibula As the R A A F authority was at that time on the mainland we had an one left A hunt went round the squadron that now at last the Doc *would* have to do some work *and* pass his own bed pans! However with the invaluable help of a Royal with a fractured scaphoid we seemed to get on all right When *Narvik* went down South some weeks later the S B A went down in her and was admitted to hospital where he stayed until we sailed for home

It was [illegible] after this second disaster that our hut was [illegible] route [illegible] and I made the first of several trips to Onslow. The sick-[illegible] aboard *Warrnambool* was [illegible] with suitable [illegible] of time and [illegible] any assistance which [illegible] was apparent that of the appendix was [illegible] immediate [illegible] should [illegible] attacked. Onslow is situated on the North West [illegible] about two hundred and [illegible] from the islands. The passage [illegible] difficult especially at night. We reached the ship in the M.R.L. having at about 1000 and increasing, at Onslow jetty at about 0200 next day. The patient was [illegible] to his bunk and [illegible] Fowler's position. Nothing was given by mouth [illegible] very [illegible] [illegible] pulse rate. The only thing given being [illegible] of [illegible] [illegible] [illegible] tenderness which had been still delayed practically disappeared within an hour and on arrival at Onslow I do not think that [illegible] had not seen him earlier would have believed he was suffering from appendicitis. However there could be no turning back after the mental discomfort taken on the island for quite apart from any other consideration one could not imagine what would happen if I asked for a boat again! When removed [illegible] the appendix was found to be in a very advanced state of inflammation much to my relief. We see of course very few patients with [illegible] appendicitis over a period of sixteen to twenty hours as we always [illegible] to remove them as soon as possible. The point I am trying to make is that I could not believe that a ruptured appendix such as this would have been symptom free if he had had recently the same treatment except no [illegible] [illegible]. I believe that the [illegible] [illegible] has an analgesic effect on the pain of acute appendicitis and that one is strengthened by two further cases later.

I did originally believe that this effect had been produced by the pre-med but I discussed the matter at Malta with Surgeon Commander Murchison who told me he had had similar experiences with chloroform[illegible]. Thus being so it would appear that there seems to be some [illegible] that anæsthetics act as analgesics in acute appendicitis. When administered to a patient on the Dickson Screen [illegible] might well [illegible] a sense of false security. So far as I know there has not been much about this subject in the literature and it would be interesting to know what experience other medical officers have had.

I have already mentioned that we made use of three such appendicular runs to Onslow. The second patient was carried aboard *Nerrit* by the illness [illegible] just as *Nerrit* was leaving to go south for a few weeks' leave and the last aboard H.M.A.S. *Keith*. On two occasions we contrived to make it about 0300. Onslow jetty even in daylight is a pretty unwelcoming affair. It is very long covered in railway lines is unpainted all weather iron [illegible] is extremely slippery has punctually no [illegible] and what there are are broken. It was necessary to take a hundred yards from the ship alongside (and there was always a swell going) to the jetty. One night of our runs lucky upon a horizontal timber upon which one walked [illegible] [illegible] to [illegible] rails to the nearest decayed [illegible]. Such a journey was even more precarious than it sounds because the pounding of the ship against the

ask of the [illegible] Such [illegible] a journey [illegible] a great deal of [illegible]. The [illegible] hazardous. He was [illegible] stretcher and laid on the [illegible] The [illegible] Army Transit Camp at Onslow which had [illegible] the Monte Bello Operation [illegible] the commanding officer [illegible] requiring considerable skill [illegible] on this very narrow and [illegible] of our patients were [illegible] the factor in the safe [illegible] which I will mention [illegible] affair at the end of the [illegible] which is a sort of [illegible] brewing tea whilst [illegible] There is no [illegible] It is also possible to call him by wireless [illegible] to be that more often than not he would [illegible] because of commitments elsewhere.

It certainly was an experience [illegible] circumstances and I will not say it did not [illegible] the anesthetic usually an open ether [illegible] The army transit camp very kindly [illegible] R.A.M.C. sergeant and he was most helpful [illegible] Apart from that he could not assist a great deal as he had [illegible] before? Nor in fact have many operations ever been [illegible] 1952 was certainly considered a bumper year.

As far Onslow itself [illegible] things and that's about all. It had one main [illegible] and one pub. It also had character and [illegible] had one [illegible] officer and [illegible] two police constables and as the Atom [illegible] it certainly began to need them. The people of Onslow [illegible] to know many of them very well. On [illegible] doctor was not available I was able to [illegible] Nevertheless they found it difficult to [illegible] touch and things were made doubly difficult [illegible] which is the big event of the year [illegible] explosion. The week before the explosion Onslow [illegible] apart from the local population there were [illegible] reporters both atomic and [illegible] from the islands and personnel of the transit camp. I was [illegible] there. I did in fact have two letters including one from the [illegible] of the Race Committee asking if I could possibly be their Surgeon [illegible] hardly show them to anyone lest they thought I was [illegible] Onslow

[illegible] Anyway he told I was jolly frightened that I [illegible] managing to wangle my way to the races that I would miss the bomb [illegible] certainly were [illegible] till after my third appendicular trip [illegible] short time but I must tell my readers to believe that they really were genuine

One of my most cherished memories of Onslow will always be of an [illegible] which occurred after the last appendix had been removed I had returned to the transit camp and was [illegible] sing with a Lieutenant from A [illegible] who was in command of the M.P.L. what time we should return to the island. The choice was this either we could return immediately to the islands the patient having recovered from his anesthetic or we could with reasonable justification wait a few hours have lunch and go on a Kangaroo Safari on which Captain Cahn had kindly offered to take us in his jeep. The temptation was great. Funnily enough we returned at once however and decided to return to the ship. As we were walking along the jetty one of the ratings singled up the M.R.L. slipped and fell from the top of the jetty to the sea below striking himself several times upon the timbers of the jetty during his descent. He lay face downwards in the sea blood pouring from an extensive scalp wound into waters infested with sharks. Moreover a strong current was sweeping him under the pier. The most extraordinary bravery was shown by several members of the ship's company of the M.R.L. One member of the crew leaped in and held his head above water whilst others manipulated a line around him. Eventually he was hauled up into the stern of the M.R.L. and laid on the deck. He was most curiously all naked any thought of anyone [illegible] on the question. Seldom before can a patient (excepting later in the Monte Bello) have had such a gaggle of doctors around him in such a remote part of Australia. Before long both a consultant surgeon from Melbourne who was a passenger in the S.S. *Corfon* moored on the other side of the jetty and the living doctor who had just arrived in Onslow were on the scene. I was most grateful for their help and advice although I am not sure that in a small space such as that especially with almost the entire passenger list of the *Corfon* gazing down that two is not enough! Anyway before long we had drips and oxygen and all the other arts surrounding us him and had got him reasonably warm with hot water bottles and blankets. It was difficult to determine the extent of his injuries which seemed to include both chest and abdomen. After four hours it was getting cold and it was clear that he must be moved. He was [illegible]ough raised by crane and laid across the back of a jeep. The ship was kept going by attaching the bath to the crane hook. From this short journey I recall a profound collapse but he arrived again as soon as we had got the oxygen restarted. Our journey to the hospital must have been rather a strange sight. The dying doctor was perched up in front of the jeep supporting the oxygen apparatus and I was perched astride the stretcher in the rear supporting the drip bottle. Captain Cahn nobly rushed over the railway lines very gently and when he eventually got us to the hospital the patient was looking somewhat more alive than dead which was some improvement. His condition improved at first and then gradually

[illegible]. He seemed to have some g[illegible] [illegible]. [illegible] was [illegible] and it was clear that [illegible] [illegible] [illegible]. [illegible] experience [illegible] shown by the R.A.A.F. [illegible] [illegible] from Perth within [illegible] hours [illegible] [illegible]. We [illegible] the patient [illegible] [illegible] to the [illegible] [illegible] to [illegible] the [illegible] [illegible]. It [illegible] [illegible] among [illegible] of the R.A.A.F. It was agreed [illegible] [illegible] [illegible] to [illegible] and [illegible] the R.A.A.F. [illegible] [illegible]. It soon became apparent that the [illegible] [illegible] [illegible] [illegible] [illegible] off. It [illegible] [illegible] [illegible] the handles of the stretcher on which the patient [illegible] [illegible] R.A.A.F. [illegible] to the whaler [illegible] from whom the [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] happened. [illegible] [illegible] [illegible] got hold of [illegible] [illegible] [illegible] half [illegible] through the next [illegible] it was discovered [illegible] [illegible] them off the R.A.A.F. stretcher and not the patient. [illegible] [illegible] handles off the patient.[illegible] [illegible] we then [illegible] the [illegible] [illegible] the plane took off for Perth. He made [illegible] [illegible] [illegible] [illegible] hospital [illegible] discharged [illegible] light duties. We [illegible] [illegible] [illegible]. It was dark. A signal [illegible] us to return [illegible] [illegible] [illegible] the patient was embarked [illegible] [illegible] [illegible]. All he had now to return to the whaler was [illegible] [illegible] [illegible] and one half off and [illegible] handles![illegible] He decided [illegible] was the better part of [illegible] and that he would face the whaler [illegible]. Meanwhile the stretcher and the [illegible] handles were returned to [illegible] [illegible] place on the jetty. And *did* the whaler [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] and the R.A.A.F. presented him with [illegible] new stretcher.

[illegible] purposes [illegible] the expedition [illegible] be divided into three phases. Phase 1 [illegible] with the [illegible] of *[illegible] change* and *[illegible]* at the islands; phase [illegible] until the [illegible] *[illegible] Pugu and Tracker*; phase 3 with the [illegible] of the bomb. Phase 3 ended when the Special Squadron finally left the islands [illegible] [illegible]th October.

[illegible] [illegible] [illegible] [illegible] [illegible] associated with phase one, what about our [illegible]? There is no doubt that a great deal of trouble was taken by those responsible for planning in connection with this point. Fishing was [illegible] the [illegible] popular [illegible]. While the lagoon itself was plentifully supplied the waters round the islands were [illegible] richer. A large number of [illegible] were [illegible] [illegible] [illegible] the stern. Practically all the fish caught were edible and there were no [illegible] of poisoning. As the days went by and people got more adept at the sport [illegible] hooks bait, and the fish caught got larger and larger. A game [illegible] was started between the two ships and a weekly signal was made of all fish caught weighing more than 10 lb. The most tremendous rivalry [illegible]. Meanwhile the crews of the L.C.A.s discovered that by dangling a line astern with a hook and a piece of red bunting they frequently caught tuna [illegible] [illegible]. It was thought that the L.C.M.s

[illegible] How [illegible] were even better, and [illegible] without at least one [illegible] lines dangling [illegible]!

Quite often in the evenings parties [illegible] to go out in a launch trolling either with rod or with a heavy handline. There was a tendency for all to purchase too light tackle for the type of fish and no less than three officers broke their rods and several had recurrent reel trouble. Still there is no doubt about it that fishing did keep up our morale particularly when one recalls how few had ever fished before in their lives when we first arrived at the islands. Seine net fishing was also in vogue for a time but it is hard work and the craze soon failed.

Another sport in which many of us indulged was turtle catching or rather trying to catch a turtle. The lagoon abounds with them and it is an indication of what elusive creatures they are when I say that I did not hear of more than two Hawkesbill and five Greenbacks being caught the whole time we were there. It will be recalled that the former is caught for its shell and the latter for its meat.

It is said that the routine way to catch a turtle is to turn it over on its back. But what if it is not ashore? The female turtle goes ashore usually in the dark during September and October to lay her eggs which she secretes in the sand. Apart from that both male and female seem to be entirely aquatic. Only a very few turtles were ever seen ashore during our stay at the islands and then only towards the end. We tried laying a Seine net across a bay at high water and waiting till low water. We only tried it once. We got into the most frightful trouble with nets caught on coral and turtles swimming through holes torn in the net. Many attempts were made to shoot them. A shotgun is quite ineffective and a rifle requires a jolly good shot. The head only appears for a fleeting second before it disappears like a flash of lightning. To shoot at a turtle submerged even if it only be a few inches is quite ineffective because of deflection. As it became apparent that the problem was a difficult one so the rivalry between the two ships to be the first to catch a turtle increased. At Roebourne, a small town on the north west coast, there used to be a turtle canning factory during the 1920s. The turtles were caught in the Monte Bellos by Malays who used to jump out of their boats on to the turtle's back and hold its front flippers out of the water so that it could not dive. Ropes were then secured around it and it was hauled inboard. Such turtles were kept alive in a netted enclosure until being transported to Roebourne. We found the remnants of one such enclosure during a picnic. We however did not get our first turtle in any such orthodox manner. I have already said that the very sight of a boat was enough to make a turtle dive instantly. One day however we were in a launch when we saw an extraordinary object which we took to be a whale or some such monster. On closer inspection we discovered it was two turtles. Now Mr Turtle courting is a very very different reptile to Mr Turtle by himself. He has but one thought apparently

to win but [illegible] It was possible to cruise right round the [illegible] On this first occasion we were very badly equipped There were [illegible] only a twenty pound mallet a gaff [illegible] a boat made out of a petrol tin kept Each man seized what he thought would win the day Unfortunately the coxswain was laughing so much that he drove the boat right over the loving pair and they slowly sank from sight and were never seen again However this set us thinking It was suggested that if such an episode occurred again and that we were in an L C M we could down ramp full speed ahead scoop them up and there you are Unfortunately we never had the opportunity to put this theory into practice Nevertheless a Lieutenant from *Vernon* did silently approach such a pair in an L C A one day He stood in the bows with a rifle and when the vessel was just about to run them down he shot the old man through the neck He dived and then came to the surface and was hauled aboard Unsporting did you say? Well we were desperate In addition we had the Lord Mayor's recipe for turtle soup and we wanted to try it out very badly Half a bottle of Madeira went in amongst other things but everyone agreed that it tasted much more like fish water than mock turtle soup The steak however was quite nice tasting rather like veal

Bathing never caught on very much for two reasons Firstly everyone was very anxious about sharks especially after the first Tiger shark was caught from *Narvik* early on in the operation Secondly it was never so hot that one felt one must swim and most of the time it was on the cool side for swimming In order to obviate the first drawback bathing was only officially allowed in one of two bays specially netted off for the purpose At low water these bays completely emptied out

There was a N A A I I canteen ashore in each of three islands where beer and small eats could be purchased and this proved to be very popular Close to the canteen on two of the islands were football pitches They were covered in rather loose deep sand and although popular were not good to play on There was also a hockey pitch covered in a turnip cloth called hessian which provides an excellent covering for sand It was unfortunate that there was not sufficient hessian available to cover the football field A cricket field and rifle range were also constructed but I do not think they were ever used

Aboard there was some boxing and polo and indoor hockey in the tank space A film show was held on the upper deck four times weekly a different show twice weekly We were very fortunate with our films shows both the apparatus and a large proportion of the films shown were excellent

Sailing was quite popular The routine was to have rounds divisions etc one week and a free week and the next Those of the ships company who wished could go off for the week end and jump on one of the islands

This routine was particularly popular amongst the officers who could of course keep in touch with affairs on board ship It was a common practice to take an L C A for the week end select one of an endless selection of new spots to visit and well equipped with food suitable for a barbecue together with the appropriate fluids set sail on a Saturday afternoon returning the following evening The afternoon would be spent fishing the evening building

a big camp fire [illegible] making the fish (if any were caught) steak sausages and eggs. Whenever we camped we could always be sure of one thing namely a plentiful supply of oysters with which to start the meal off. In fact early in the century these islands were used as a centre for conducting experiments on pearl culture by a man called T. H. Haynes. He was particularly interested in growing bigger and better shells and for his purpose he constructed huts in one of the islands inside which he grew his oysters. Haynes had a partner who died young and was buried in Roebourne. Haynes himself lived alone except for a Malay servant. Pearl was harvested now and then every few weeks by Mr. Clark of Onslow who tells some interesting stories about this remarkable man. The remains of the original locks and cells that are or two are all that is left on the islands today. Apparently during one of his infrequent visits to the mainland Haynes was assaulted by an aborigine with a club sustaining a fractured skull. The injury required the insertion of a plate to fill a defect and this was performed in England. Many years later when he died in England Haynes left his skull to the Royal College of Surgeons and asked that his ashes might be buried beside those of his parents in Roebourne. His grave can be seen in Roebourne today. During his visits on the islands Haynes collected some rare corals and other specimens which stirred the interest of the National Geographical Society that they sent out a man called Montague just before World War I to collect specimens of the fauna and flora of the islands. His collection also included quite a number of unique specimens so it was not surprising that when the British Museum heard of the operation they in co operation with Kew and the London Zoo supplied a vast array of apparatus for the collection and preservation of the specimens. Nothing was left out there was even a hurricane lamp.

I have dealt in some detail about phase 1. I am afraid that those of us who were there regard it as the phase! This is not altogether surprising because for reasons connected with weather and the unreliability of boats it was never possible for those who arrived at the beginning of phase 2 to get around and see the islands to the same extent that we had. Nevertheless phase 2 was also full of interest. The work in the room reassembling the mounting of scientific equipment and its installation in position. It was quite extraordinary to see how well all the very different humours in this gigantic operation got on together. Everyone worked really hard and with a will.

With the arrival of *Cumpanna* the acute ablution problem was solved. On one occasion I was rounded together with a case of unit appendicitis by helicopter in very different kettle of fish to the old phase 1 days. A further half dozen cases occurred during phase 2 but on examination of the insides one could not believe that there was any hurry for this.

Whilst we had been collecting specimens of fauna and flora throughout phase 1 we had been doing so in a very gentle sort of way. With the arrival of *Cumpanna* with all her equipment and under the energetic leadership of Surgeon Commander World things really got going in a big way. I remember returning to *Cumpanna* was laden with some fresh prizes but it was on the bump of mud sea snake lizard rat or what you will. The collection grew

like [illegible] I have no doubt that [illegible] will be required [illegible] museum authorities [illegible] have been found.

So the days went by and more and more doctors [illegible] on the scene. There were three naval medical officers Surgeon [illegible] Medal Surgeon Lieutenant Etheridgton and myself three R A F officers Wing Commander Dhenin (SMO of *Tracker*) Wing Commander Garraway and Squadron Leader Mortimer one Army doctor Major Lundy and Dr Butterfield from the Medical Research Council. In addition Dr Solandt the Canadian scientist who attended the tests is a Doctor of Medicine.

One medical incident which occurred during this phase is I think worth recording. We had quite a lot of experience of handling stretchers both on and off the ships and up and down Onslow jetty. We found the Neil Robertson stretcher excellent aboard. During phases 2 and 3 scientists came to live in *Zeebrugge*. Accommodation was extremely limited so during this period a very large packing case in the tank space was fitted out as a cabin. It contained four bunks and was fitted with a door fans and all the other necessaries. Although basically unsatisfactory and reminiscent of the tube stations during the war it was the best that could be done under the circumstances. One evening I received an urgent call to see a young scientist who had become extremely ill during the preceding two hours. He was practically unconscious had the most marked photophobia I have ever seen, and definite neck rigidity. I decided he must be moved immediately to *Campania* for lumbar puncture. He was strapped into a Neil Robertson stretcher carried to the after hatch and hoisted out by derrick. There is nothing much in this but the points I would like to make are (1) In First Aid to the Royal Navy page 63 it is stated that in an unconscious man the arms should be secured inside the chest piece. I consider this a most dangerous procedure—unless the straps are done up extremely tightly and in a gravely ill man this is not possible then in my opinion there is a real danger of the patient slipping through the stretcher. By securing the arms outside the chest piece he cannot slip through, nor in the short time during which he will be hoisted is there likely to be any danger to his brachial plexus. (2) The strap which is fitted to the standard Neil Robertson stretcher to prevent the head of an unconscious man from dropping forward is quite ineffective in a patient with neck rigidity. In our patient the head kept slipping and was a cause of some concern. Until some one designs something more suitable the solution to the problem in such a case seems to be to secure the head to the stretcher with some form of adhesive strapping passed round the forehead.

As phase 2 gradually ran out excitement naturally mounted high. There was a full rehearsal on 26th September and after that all was set for D Day. *Narvik* with other ships of the special squadron withdrew to a position about fifteen miles south of the islands on the day preceding D Day. The actual day of the explosion was governed in the main by the weather. The wind had to be in the right direction and strong enough to blow the cloud from the Australian mainland and at the same time the sea had to be moderate enough

[illegible] small boats [illegible] to [illegible] any [illegible] the actual [illegible] [illegible] adequate to [illegible]. We [illegible] all [illegible] [illegible] on the [illegible] [illegible] started [illegible] flowing [illegible] it [illegible] being necessary.

Every [illegible] for a few days [illegible] after [illegible] of the nature of [illegible] to witness the explosion [illegible]. All [illegible] the upper deck with the officers standing behind [illegible] from the explosion. There was a count down [illegible] there was a most brilliant flash so bright [illegible] with our back turned, eyes closed, and hands held [illegible] in front of our eyes. There was then a count up and when [illegible] the order was given "You may look round now".

The sight we then beheld [illegible] cloud billowing [illegible]. The colouring was magnificent [illegible] silver and here and there almost white in places [illegible] the [illegible] with it and caused it to [illegible] the north whilst a slightly different direction and strength [illegible] caused it to [illegible] a Z shape. The sound of the explosion took about [illegible] minute to reach us and was split up into two sharp cracks. We felt little of the blast from where we were. Such was the bomb and when [illegible] all over and phase 3 the cleaning up period began in earnest there was a feeling of anticlimax amongst us.

From the medical angle of course phase 3 was the most interesting. Methods of decontamination were things we had heard about but never seen in action. Security [illegible] nothing [illegible] said at present but it is a fair comment on it all to say that at least [illegible] people said to me afterwards that the whole process had given them a great deal of confidence. [illegible] back [illegible] contaminated but by carrying out the routine they had been cleansed. They had heard with their own ears the telltale noise of the Geiger counter being [illegible]. Phase 3 took exactly twenty eight days and then the special squadron sailed for home. It was an experience we shall all treasure for many years to come.

THE MEDICAL CARE OF FAMILIES IN HONG KONG 1949-50

BY

Surgeon Lieutenant H. R. MALLOWS, R.N.

The extension of the benefits of the National Health Service to the families of Naval and Admiralty Civilian Personnel on Foreign Stations has introduced new problems for the Medical Service and the medical officer of the Royal Navy. These problems will differ to some extent from one station to another, and the same problems may require different solutions in differing situations. Mathers (1952) has described the large scale arrangements which have been made in Malta to deal with 6,000 family units. In Hong Kong during the period from July 1949 to December 1950 there were approximately 400 women and children eligible for N.H.S. treatment and it might be of interest to consider how the existing services were used and developed to provide treatment for this very much smaller number of dependants.

Organization

In April 1949 the families clinic which had been established in H.M. Dockyard surgery was moved to larger premises in an adjacent building. This afforded separate consulting room and examination and treatment room each approximately 12 ft. square and a large waiting room, a great improvement on the previous arrangement of a share of the European Dockyard Employees waiting room and one small room about 10 ft. square. The clinic was open each morning from 10.30–12.00 and was most efficiently managed by a part time civilian nursing sister who had had previous tropical experience in the Malayan Nursing Service before the war and also during internment and had subsequently returned to Hong Kong as the wife of an R.I.A. Master. The assistant medical officer of the Dockyard attended the clinic as a part time occupation. I had been assured by my predecessor in this appointment that he did not attend families and had cheerfully erated and stored all my relevant textbooks before sailing. I suppose I should have been less surprised than I was to discover on arrival that the medical officer's duties had been rearranged whilst I was on passage and that I was now to run the families clinic. The medical specialist kindly came to my assistance with the loan of Sheldon's Diseases of Childhood and with this my wits and Price's Medicine I started the clinic.

Visits to patients who were too ill to attend the clinic were made by the assistant medical officer of H.M.S. *Tamar* also as a part time occupation in the afternoons. This dichotomy was by no means ideal but was the best that could be devised with the staff available at that time.

The daily average of attendances at the clinic during the quarter ending

[illegible] with a range of [illegible] the [illegible] Dockyard workers [illegible] of 12 and a range of 7–15 it would surmised that the [illegible] dull and that forenoon calls on colleagues in ships [illegible] daily average of visits was about 1–1 but this [illegible] as it might seem as about 10 per cent of the staff went to Stonecutters Island involving a boat trip of twenty five to thirty minutes each way and a walk of five to ten minutes [illegible] about one and a half hours door to door and about half were in Kowloon involving a combined journey by boat and car of about forty five minutes each way or a door to door time of about one and three quarter hours

Only general medical and surgical cases were dealt with at the clinic. Gynaecological cases were referred to the Army Gynaecologist or to Professor Gordon King of Hong Kong University who was appointed (together with the Professors of Medicine and Surgery) as Honorary Consultant to the Navy in Hong Kong. Obstetric cases were referred to the Colonial Medical Service Specialists' admission for delivery being arranged either to Queen Mary or Kowloon Hospitals according to whether the patient lived on Hong Kong Island or the Mainland. Other cases were referred as necessary to the appropriate specialist at the R.N. Hospital and admitted to that hospital if need be.

Clinical Trends

Some idea of the types of cases dealt with can be obtained from the following tables which are an analysis of all cases shown on the sick lists for the eighteen months from 1st July 1949 31st December 1950.

1	Respiratory	113	
	Asthma	1	
	Bronchitis	45	
	Bronchopneumonia	2	
	Common cold	41	
	Primary atypical pneumonia	1	
	Pulmonary tuberculosis	2	
	Tonsilitis	21	
2	Cardiovascular	4	
	Syncope	1	
	Varicose veins	3	
3	Gastro intestinal	84	
	Alveolar abscess	3	
	Appendicitis	3	
	Cholecystitis	4	
	Colitis	1	
	Duodenal ulcer	1	
	Duodenitis	1	
	Dyspepsia	1	
	Enteritis	49	
	Feeding difficulty	2	
	Gastritis	9	
	Gastro enteritis	3	
	Hematemesis	1	
	Hernia (umbilical)	1	
	Infective hepatitis	1	
	Pharyngitis	1	
	Teething	2	
4	Neuropsychiatric	14	
	Convulsion (teething)	1	
	Epilepsy	1	
	Facial palsy	1	
	Neuroses	9	
	Neurasthenia	1	
	Sciatica	1	
5	Eyes Ears and Nose	18	
	Conjunctivitis	3	
	Otitis externa	5	
	Otitis media acute	1	
	Otitis media chronic	1	
	Sinusitis	5	
6	Infectious Fevers	2	
	Chicken pox		
	Dengue		

[illegible] with Chinese [illegible] in homes [illegible] at least [illegible] were [illegible] rapidly [illegible] large [illegible] the [illegible] and [illegible] in practice [illegible] the former [illegible] the Chinese [illegible] the latter for myself and [illegible] middle course with bismuth [illegible] for the majority of the [illegible] patients this was given for [illegible] in which time most of the simple cases had subsided; only [illegible] or which originally showed other signs such as blood [illegible] were investigated with reference to the causative organism. No [illegible] typhoid or dysentery was detected amongst the families although [illegible] in the Chinese [illegible] and in the Colony in general. [illegible] of typhoid demonstrated at a Clinical Meeting of the local branch of the British Medical Association was an Army Medical Officer who was out of date with his T.A.B. inoculations. One school of thought [illegible] Sulphaguanidine or succinyl sulphathiazole for all cases of enteritis but there seemed to be little justification for the use of such powerful remedies when simple symptomatic treatment was effective and at least some risk in exhibiting them without prior identification of the organism.

Ascariasis and Trichuriasis were endemic in the Colony but the latter, rather resistant to treatment, was not found in the families and the former usually responded rapidly to a simple routine with santonin.

In the first nine months of 1949 there were [illegible] human [illegible] and 24 cases of animal rabies notified in the Colony, though none occurred on the Island of Hong Kong itself. A strict routine of 14 daily [illegible] injections was adopted for all cases of bites or scratches by dogs and cats, and also for 1 case of monkey bite: this was unpleasant treatment for adults ([illegible] into the anterior abdominal wall) and was particularly distressing for small children. On an average two adults and three children were treated each quarter, the most notable case being that of the wife of a [illegible] officer who was bitten by the cat of [illegible].

Minor hypochondriasis and anxiety [illegible] among wives who found themselves with unaccustomed leisure on being suddenly transported from the household drudgeries and the austerity of post-war England to a land with food in plenty and with Chinese amahs to [illegible] and to do all the other chores. Many officers' wives took part-time [illegible] employment which served to keep them happy and [illegible] in addition to the local allowances, but there was not much suitable employment for the wives of ratings. In only one case, however, was it necessary for a wife to be sent home on account of neurosis, and this was due to depression following the stillbirth of a much-wanted child; the husband [illegible] officer had almost completed his tour of duty and his [illegible] arranged departmentally. In another case the number and severity of the symptoms of a middle-aged lady varied [illegible] in inverse proportion to her husband's sobriety, and for some time it was [illegible] which of the two would be the cause of their return home, but the husband eventually [illegible] by a short head.

Marital problems were by no means uncommon One husband attending with a black eye said that his wife had thrown everything she could lay her hands on at him and finally locked herself in their hotel bedroom and he wondered if I could go and reason with her I politely declined this kind offer pointing out tactfully that she was his wife and not mine Another husband who was asked to call in after his wife had complained that he was beating her appeared with his face heavily scratched and had clearly not had matters entirely his own way It should here be mentioned that the Naval Chaplain was particularly helpful in dealing with some of these problems

Complaints

Although the treatment of families abroad is in the nature of a concession and the majority of patients were fully co operative in making the best of the available facilities there were a few who tended to demand what they were pleased to think were their rights and to complain loudly if they did not get what they wanted Some written complaints were made and although they were found to have little substance they caused appreciable irritation and waste of valuable time to the medical officers concerned Of the 4 cases which come to mind it is noteworthy that all the complaints were known as naval ward customers in their own departments and perhaps a coincidence that they were all civilians one of them was so persistent that it was felt necessary to make a counter complaint in writing to the Commodore after no less than three frivolous night calls and suitable disciplinary action was taken to prevent any recurrence

Emergencies

Two different schemes of dealing with emergency calls were in operation during the period under consideration At first the four medical officers of *Tamar* and the dockyard maintained a rota of duty offices in *Tamar* to deal with all cases in *Tamar* and the dockyard and the families on Hong Kong and Stonecutters Island families on the mainland being dealt with by the Duty Medical Army Officer This duty sometimes included Medical Guard for ships in port but at other times there was a separate Medical Guard in addition to the Duty Officer in *Tamar* In view of the very infrequent night calls—seldom more than one or two a week and often less—this was considered to be unnecessarily heavy cover and a change was made whereby one Medical Guard was maintained for all ships and *Tamar* and the dockyard and the shore based medical officers maintained a separate Families Guard Rota on telephone call This scheme worked very satisfactorily and was much less of a tie to the medical officers concerned

Reorganization

With the outbreak of the Korean War and the subsequent build up of Hong Kong the medical officers of *Tamar* and the dockyard soon found that they could be quite fully employed in their own departments and it became increasingly difficult to give the necessary time to families matters Somewhat fortuitously a medical officer from one of the cruisers became available for

duty in *Tamar* at first temporarily and later permanently so that Surgeon Lieutenant D. M. Reader was then released from duties in *Tamar* and took over all the care of the families. At about this time also there was a swift turnover in Nursing Sisters attached to the clinic: first returned to England with her husband and the second also a married woman left after only four months because of pregnancy; a third part time civilian was found but shortly afterwards the appointment of a naval nursing sister was approved. This sister was appointed to the hospital where she was available for duty in addition to the Families clinic and she was also to carry out home visits which it was thought would be very helpful. She did not in fact arrive until after the end of the period under consideration.

The task of dispensing the benefits of the National Health Service to the families in Hong Kong produced many interesting problems medical, social and administrative and it must be recorded that their solution was often largely dependent on the helpful and understanding co-operation of the Medical Officer in Charge and Staff of the R.N. Hospital. My thanks are due to them and also to Surgeon Lieutenant D. M. Reader who during this time carried out the far more time consuming but less interesting part of the families care viz. that of home visiting.

In attempting some comparison of this experience with that described by Mathers (1952) it would seem that the services offered were as might be expected largely similar except that in Malta there were: 1 far more night calls: 2, far more home visits by nursing sisters and 3 highly organized gynecological and obstetric services manned by senior medical officers. Night calls are often a problem in any form of general practice but more not particularly so in Hong Kong with the one notable exception already quoted. Serving medical officers have the advantage here over their civilian colleagues in that they can adopt a firmer attitude towards unnecessary calls without exposing their families to the risk of being deprived of 17s. 6d. worth of bread and butter per annum when the rejected patient asks for his card to transfer to another doctor's list. As already noted home visits were to be made by the naval nursing sister who was eventually appointed to the clinic and I understand that this was found to be a great improvement on the previous arrangements.

The existence of gynecological and obstetric clinics run by naval medical officers can only be viewed with alarm by those of us who on joining trained other freedoms for what we thought would be a certain freedom from those two aspects of medical practice. Even the anxieties inevitably associated with the treatment of young children are not the least disturbing to those accustomed to the more robust therapies appropriate to young sailors or long-necked petty officers. No doubt however National Service and Short Service Officers who are interested in those subjects welcome the opportunity to pursue their interests during their service but is this in the best interests of the Service or of the patients? My own feeling is that if is not provided that a suitable alternative exists as it does in Hong Kong. It seems unlikely that a short service specialist in these subjects would see much future for himself in the

Service at present and also unlikely that permanent officers would wish to take up the subjects. The prospect then is of a rapid succession of very junior specialists which has obvious disadvantages. On the other hand there would be reasonable prospects in the specialty if the care of Service families at home were also undertaken, say within a five mile radius of the Home Ports. This is a feature of the medical service of the United States Navy to which attention is paid in recruiting campaigns, and the busy obstetric wards are a proudly displayed feature of the National Naval Medical Centre at Bethesda; there, however, the attraction is at least partly the great saving in expense for the serving personnel, a factor which would not now apply in this country with the National Health Service.

Whatever may be the future arrangements for the care of dependants at home and abroad, it must be admitted that this appointment in Hong Kong brought much enjoyment even to one a little prejudiced about treating women and children; it was particularly pleasant to meet so many of the families as friends as well as patients, and the combination of the care of 500 women and children with that of 5,000 Chinese dockyard workmen produced a remarkable variety of clinical experience.

I am indebted to Surgeon Captain J. G. Maguire, C.B.E., R.N., late Staff Medical Officer to the Commodore, Hong Kong, and Medical Officer in Charge, R.N. Hospital, Hong Kong, for permission to publish this article.

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CLASSIFIED MEDICAL REFERENCES IN THE WORKS OF SHAKESPEARE

BY

Surgeon Commander J. W. L. CROSFILL, R.N.

PART IX

Early Rising

487. *Sir T. B.* [illegible] not to be a-bed after midnight is to be up betimes; and 'diluculo surgere,' thou knowest. *Twelfth Night* II. 3.

[illegible]

[illegible]

488 [illegible]

[illegible]

489 [illegible]

[illegible]

490 [illegible]

491 [illegible]

492 [illegible]

493 [illegible]

494 [illegible]

495 [illegible]

Re[illegible]

But h[illegible]

The [illegible]

Ar[illegible]

My [illegible]

[illegible]

496 [illegible]

[illegible]

497 [illegible] Shrouded [illegible]

With [illegible]

[illegible]

498 [illegible] A [illegible] impudent [illegible]

Is [illegible] more loathed th[illegible]

[illegible] of [illegible]

Enuresis

499 *Prudent* [illegible] be well be some-drunk and [illegible]
With [illegible]rm[illegible]sive to his bed clothe[illegible]
that [illegible] conditions and by [illegible]
[illegible]

500 *Mr. [illegible]* What a tale it was he [illegible] when [illegible]
[illegible]
Mrs. [illegible] [illegible] half afraid he will have need [illegible]
[illegible] rather will do him a benefit — [illegible]
(*See also* 85 and [illegible])

English Sweat

501 *Mr.* [illegible] [illegible] that with the [illegible]
[illegible] with the [illegible] and what with [illegible]
[illegible]

[illegible]

Laryngismus Hystericus (Dancing Mania)

502. *Mr.* [illegible] Since that [illegible]
[illegible]
[illegible]

Epilepsy

508 Caesar — He had a fever when he
And when the fit
How he did shake
His coward lips did
And that same
Did lose its lustre
Ay, and that
Mark him and
Alas it cried
As a sick girl.

[illegible]

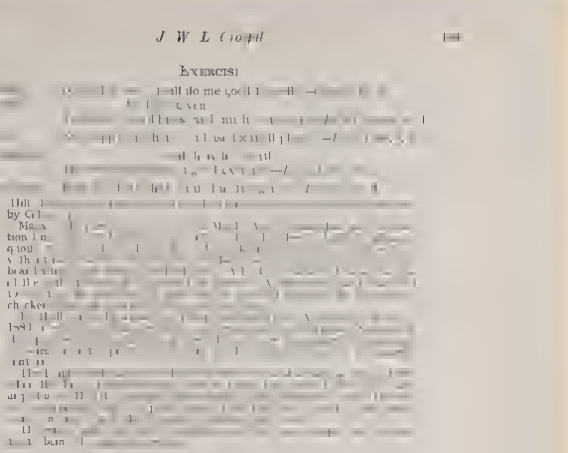
Will — And she lo
Ham — [illegible]
That
For
And
Caesar — Be
[illegible]
[illegible]
Ham — At
He
Ham — [illegible]
Hor — Be
Ham — I
What
Now
In
That
Must
Hor — Yes
Indeed
Ham — Not
But
Yet
What

[illegible]

Epilepsy Spontaneous

[illegible]

Exercise



Hints

523 *Deschales* ...

524 *Dr. ...*

525 *C...*

526 *Hurst*—*s*

528 *I*—*s*

529 *Queen*

530 *Harlech*

531 *Clyn*

542 *H...*

543 *Harold*

544 *Ingra*

[illegible]

535 *Cornwall* [illegible] out, vile jelly!
Where is thy lustre now? —*King Lear*, [illegible]

536 *Phebe* [illegible]—that are the frail'st [illegible]
Who shut their coward [illegible] —[illegible]

537 *Lear* [illegible] point at me? —*King Lear*, [illegible]

538 *Lear* [illegible] glass eyes —*King Lear*, IV 6

539 *Imogen* I would have broke mine eye strings, crack'd [illegible]
To look upon him —*Cymbeline*, I 3

540 *Edgar* My father, with his bleeding rings,
Their precious stones new lost —*King Lear*, [illegible]

541 *Menenius* You talk [illegible] O that you could turn your eyes [illegible] the [illegible] and make but an interior survey of your good selves —*Coriolanus*, II 1

[illegible]

542 *Viola* She [illegible] so much
That [illegible] lost her tongue [illegible]

543 *Macbeth* Mine eyes are made the fools o' the other senses —*Macbeth*, II 1

544 *Bertram* [illegible] and when my eye
[illegible] mine eye
[illegible] —*All's Well That Ends Well*, [illegible]

545 *Arthur* [illegible]
[illegible] wondering, hour
[illegible]
[illegible]
Your vile intent [illegible] seem horrible —*King John*, [illegible]

546 *Bottom* Good Master Mustard-Seed, I [illegible] kindred hath made my eyes water [illegible] —
Midsummer Night's Dream, [illegible]

547 *Launcelot* [illegible] this is my true begotten father! [illegible] sand-blind, high gravel blind, knows me not

Gobbo Alack, sir, I am sand blind; I know you not —
Merchant of Venice, [illegible]

[illegible]

Earl Patrington.

348 *Earl*
[illegible] beautied [illegible]
[illegible] the th[illegible]
[illegible] [illegible]

349 *Hon*
[illegible]
[illegible]
[illegible]

350 *Hon*
[illegible]
[illegible]

351
[illegible]
[illegible]
[illegible]

Lyttelton.

352 *Mr*
[illegible]
[illegible]

353 *Ode*
Wh[illegible]
Or [illegible]

354 *Hon*
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

Fatigue

[illegible]

Faintness

[illegible]

[illegible]

[illegible]

[illegible]

560 [illegible] Had [illegible]

[illegible]

[illegible]

[illegible] of the pupil [illegible] heart beat [illegible]

arterioles and capillaries in the skin relaxation of the bronchioles intestinal inhibition conversion of glycogen into glucose contraction of the capsule of the spleen and gall bladder relaxation of the detrusor urinæ dilatation of the erectores pili enhanced excitability of muscles and nerves in fatigue in the uterus.

Such of these responses as are observable by unaided eye are given by Shakespeare. See 700 for enuresis due to fear.

562	*Ross*	Where the Norwegian banners flout the sky And fan our people cold.—*Macbeth* I ii
563	*Macbeth*	Whose horrid image doth unfix my hair And make my seated heart knock at my ribs Against the use of nature. Present fears Are less than horrible imaginings. My thought, whose murder yet is but fantastical Shakes so my single state of man that function Is smother'd in surmise, and nothing is But what is not.—*Macbeth* I iii
564	*Lady Macbeth*	[illegible] And unbend no more than that At which it did so frankly *Macbeth* I
565	*Macbeth*	[illegible] — *M* I
566	*Macbeth*	And keep the natural ruby [illegible] When mine is blanch'd with [illegible] *M* I
567	*Macbeth*	[illegible] *Macbeth* I
568	*Macbeth*	I have almost forgot the taste of fears. The time has been, my senses would have cool'd To hear a night-shriek, and my fell of hair Would at a dismal treatise rouse and stir As life were in't. I have supp'd full with horrors. Direness, familiar to my slaughterous thoughts Cannot once start me. *Macbeth* v
569	*Iago*	[illegible] Do you [illegible]
570	*Sir T Ha*	Thus [illegible] [illegible]
571	*Fabian*	[illegible] [illegible]
572	*Cassius*	You look [illegible] And [illegible]
573	*Brutus*	And [illegible] Cassius shall [illegible] [illegible]
574	*Hermia*	How [illegible] *H*
575	*Hamlet*	[illegible] *H*
576	*Ghost*	[illegible] Would [illegible] Make [illegible] But [illegible] A [illegible] Like [illegible] *H*

578 Queen — Your bedded hairs, like life in excrements,
Start up and stand on end.—*Hamlet* iii. 4

579 Hamlet — You that look pale and tremble at this chance.—*Hamlet* v. 2

580 King John — A fearful eye thou hast: where is that blood
That I have seen inhabit in those cheeks?—*King John* iv. 2

581 [illegible] — [illegible] makes me giddy with these ill tidings.—[illegible]

582 King Richard — This ague fit of fear is over-blown.—*Richard II* iii. 2

[illegible] [illegible] — How now, my friend! why dost thou look so pale?
For fear, I promise you, if I look pale.—*Taming of the Shrew* ii. 1

583 [illegible] — [illegible] in this presence,
But his red colour hath forsook his cheeks?—*Richard III* iii. 4

584 Gloster — Come, cousin, canst thou quake, and change thy colour,
Murder thy breath in middle of a word,
And then begin again, and stop again,
As if thou wert distraught and mad with terror?—*Richard III* iii. 5

585 King Richard — Cold fearful drops stand on my trembling flesh.—*Richard III* v. 3

586 Falstaff — [illegible] thy father's beard is turned white with the news.—*Henry IV* Pt. I ii. 4

[illegible] of the hair turning white [illegible] The whiteness itself is said to [illegible] the presence [illegible] One case occurred [illegible] after three days of [illegible] turned grey in one night.

My hair is grey, but not with years,
Nor grew it white
In a single night,
As men's have grown from sudden fears.—*Byron*

587 Northumberland — Thou tremblest; and the whiteness in thy cheek
Is apter than thy tongue to tell thy errand.—*Henry IV* Pt. 2 i. 1

588 Moth — For blushing cheeks by faults are bred,
And fears by pale white shown.—*Love's Labour's Lost* i. 2

589 — Didst thou not mark my face? was it not white?
Saw'st thou not signs of fear lurk in mine eye?
Grew I not faint? and fell I not downright?
Within my bosom, whereon thou dost lie,
My boding heart pants, beats, and takes no rest,
But, like an earthquake, shakes thee on my breast.—
Venus and Adonis 643

590 Ariel — [illegible] the king's son, Ferdinand,
With hair up-staring,—then like reeds, not hair.—*Tempest* i. 2

591 Hermia — I [illegible] with fear.—*Midsummer Night's Dream* ii. 2

592 Quintus — [illegible]
A chilling sweat o'er-runs my trembling joints.—*Titus Andronicus* ii. 3

593 Martius — O brother, help me with thy fainting hand—
If fear hath made thee faint, as me it hath.—*Titus Andronicus* ii. 3

594 Juliet — I have a faint cold fear thrills through my veins,
That almost freezes up the heat of life.—*Romeo and Juliet* iv. 3

595 *Ariel*

596 *Ariel*

597 *Ju[no]*

598 *P[rosp]*

599 *Mir[anda]*

600 *Cer[es]*

601

602

603

604

ACT V

605 *Mercut*

SCENE I

606 *Doctor*

607 *R[ug]by*
Oxf[ord]

608 *Cassio*

609 *King*

610 *King J[a]s*

611 *King J[a]s*

642 *Northumberland* In poison there is physic and these news
Having been well that would have made me sick
Being sick have in some measure made me well
And as the wretch whose fever-weakened joints
Like strengthless hinges buckle under life
Impatient of his fit breaks like a fire
Out of his keeper's arms even so my limbs
Weaken'd with grief being now enraged with grief
Are thrice themselves Hence therefore thou nice crutch
A scaly gauntlet now with joints of steel
Must give this hand and hence thou sickly quoif! —
Henry IV Pt 1 v 1

(quoif = helmet, from the use of the sick)

Hotspur But at this instant he is sick my lord
Of late struck fever *Measure for Measure* v 1

Duke an envious fever
Of pale and bloodless emulation
And what is this fever that keeps Troy on foot
Not Priam's own sinews

Ulysses This fever whereof all our power is sick
Has anyone cured of the sickness found Ulysses
What is the remedy?—*Troilus and Cressida* i 3

Fig

FIGA a figge Also a flurt with ones fingers given or shewen in disgrace Fare la fica to bid a fig for one Women in Italie use it as an othe to sweare by as our Englishwomen say by my apron strings' Florio's New World of Words 1616

This gesture was made by protruding the thumb between the index and middle finger the anatomical significance of which is apparent Fica is still an Italian vulgarity whilst its modern English usage I don't care a fig or a fig for your thoughts has lost its original significance

The quotation for Florio's dictionary is interesting in that it suggests the Elizabethan precursors of two modern English obscenities

615 *Pistol* Steal? foh! a fico for the phrase!—*Merry Wives of Windsor* i 3

616 *Pistol* The fico for thee then!—*Henry V* iv 1

617 *Pistol* When Pistol lies do this and fig me like
The bragging Spaniard—*Henry IV* Pt 2 v 3

618 *Horner* a fig for Peter—*Henry VI* Pt 2 ii 3

First Aid

619 *Iago* I light, gentlemen! I'll bind it with my shirt.
Lend me a garter —So—O for a chair
To bear him easily hence
Some good man bear him carefully from hence
I'll fetch the general's surgeon—*Othello* v 1

(The cross-garter was a long cloth strap wound crosswise from ankle to knee Maly Inn in *Turkish Night* was held to be three times as garnished)

Such an article might well be used for either ban-laging as a tourniquet The use of the tourniquet in gunshot wounds is ascribed to Fabricius Hildanus (1560–

[illegible]

[illegible] O [illegible]

[illegible]

[illegible] Pray [illegible]
He faints [illegible]

[illegible] 'tis not [illegible]
But to [illegible]

[illegible] Where is [illegible]
Help me [illegible] Bene[illegible]
Or I shall [illegible]

625 *Clopatra* Cut my [illegible]
But let [illegible]
So Anton[illegible]

626 *Anton* I am dying [illegible]
Give me [illegible]

627 [illegible]

628 *Cominius* The blood [illegible]
It should be [illegible]

629 *Duke* [illegible]

630 *Somerset* [illegible]

[illegible]

631 *Bertram* Wh[illegible]
Lafeu [illegible]

[illegible]
Reverend Mars[illegible] 1580)

FLATULENCE

632 *Lear* [illegible] *King Lear* [illegible] 2

[illegible] presence [illegible]
[illegible] passed with [illegible]
[illegible] are passed at these [illegible]

FLATUS

633 *Dr[illegible]* [illegible] word with [illegible]
[illegible] face so he [illegible]

FLESH

634 *Macbeth* I'll fight [illegible] bones my flesh b[illegible]

635 *Clown* [illegible] let your flesh and blood [illegible]

636 *Casca* And men are flesh and blood, and apprehensive. —*Julius Caesar* [illegible]

637 *Hamlet* O that this too too solid flesh would melt,
Thaw and resolve itself into a dew. —*Hamlet* I. 2

Flies

638 *Iago* Plague him with flies. —*Othello* I. 1

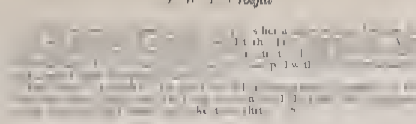
639 *Trinculo* I have been in such a pickle since I saw you last that, I fear me, will never out of my bones: I shall not fear fly-blowing. —*Tempest* V. 1

[illegible]

Flowers

640 *Ophelia* There's rosemary, that's for remembrance; pray you, love, remember: and there is pansies, that's for thoughts. There's fennel for you, and columbines: there's rue for you; and here's some for me: we may call it herb-grace o' Sundays: O you must wear your rue with a difference. There's a daisy: I would give you some violets, but they withered all when my father died. —*Hamlet* IV. 5

[illegible]



Fractures

between you and h
my fortunes against
nature
it will
Hamlet iii 3

But
back to heal his finger —*Timon of*
It
break my limbs —*King John* iv
the
and he that
one broken limb shall acquit him well
As You Like It

wishes to be
this
should break his neck as his
and wounds has been
That this
that rival combat as
hand striking must have
hunt and the treatment hath
surgical assistment and thereby
those of
Cerialus
question was
the drawing forth
problem
He
Thoughing
bring, trunnals but
lies upon the
the aggravation
are
Hegion
the
exposed in the
assaulted by
Palm Mall
nail
thou
and
As You Like It

[illegible]

[illegible]

[illegible]

[illegible]

(*To be continued*)

THE ASSOCIATION OF PITYRIASIS CAPITIS AND COMMON SKIN DISEASES IN NAVAL RATINGS

BY

Surgeon Lieutenant J. GILROY, R.N.

During a period of many months it has been noticed that a large number of ratings reporting sick at a Royal Naval Air Station were suffering from staphylococcal infections of the skin and had also an associated Pityriasis Capitis (Dandruff) of some magnitude. Whilst seborrhœic dermatitis is invariably associated with pityriasis capitis and is in fact merely this infection occurring in other areas of the body, it is felt that pityriasis capitis is a predisposing or associated factor in certain other diseases and the impression gained from continuous out-patient treatment of these conditions is that impetigo, sycosis barbæ, furunculosis, conjunctivitis, blepharitis, herpes labialis (fever blisters) and otitis externa all have a common aetiological factor in pityriasis capitis. Most of these conditions are staphylococcal infections. Impetigo contagiosa is stated by most authorities to be due to either staphylococcal or streptococcal organisms, but all cases swabbed and cultured on this station have grown a pure culture of staphylococci. Sycosis barbæ is merely a furunculosis of the beard area and as such is a staphylococcal condition. The pathology of otitis externa is given as an infection due to mixed organisms in most textbooks.

A survey of all cases seen in the sick bay, R.N. Air Station, Eglinton, by one medical officer during the six monthly period 1st July–31st December, 1932, has therefore been carried out. It was not possible to survey a longer period since inaccuracies might have appeared due to the loss of notes dispatched when ratings have been drafted from this station; complete notes, however, exist for the period under review.

The recording has been made under two headings: (a) The number of fresh cases seen during the six months. A patient may have reported sick more than once during that period, once his name had been removed from the

attended, but was included in reporting (a) the number of patients reporting sick bay again (b) the number of actual patients who had had to report sick in the six monthly period under review.

From 1st July 31st December 1952 100 fresh cases were seen in sick bay and a total of 359 patients reported sick. The notes of these cases have been divided into two groups. Group A— Associated with or believed to be associated with pityriasis capitis as listed above and Group B— Other Conditions.

Group A consists of 106 cases occurring in 67 patients that is 23 per cent. approximately of all seen and 19 per cent. approximately of patients seen.

An analysis of the 106 cases on table form shows that the total was made up as follows.

Furunculosis (boils)	38	Believed to be associated with pityriasis capitis
Impetigo and sycosis barbæ	6	
Conjunctivitis	8	
Blepharitis	7	
Hordeolum (styes)	12	
Otitis externa	11	
Seborrhœic dermatitis	27	
Total	106	

Of the conditions with the title 'Believed to be Associated with Pityriasis Capitis' only boils are of sufficient number to bear significant analysis. The 38 cases of boils were associated with a marked pityriasis capitis in 31 cases whilst all cases of boils occurring on the neck had an associated pityriasis capitis and the almost inevitable long greasy hair.

The other cases are all too small in number to offer any proof that pityriasis capitis is an aetiological factor but in all cases of impetigo and sycosis barbæ conjunctivitis styes and otitis externa and in six out of seven cases of blepharitis there was a marked pityriasis capitis. This fact plus numerous observations of cases in temperate and tropical conditions over a period of almost four years, lead to the inference that pityriasis capitis is also an aetiological factor in these conditions.

Discussion

Pityriasis capitis is an infection of the scalp due to the action of two organisms the staphylococcus and a yeast the spore of Malassez. The more severe the condition the heavier the growth of staphylococci obtained from the scalp and presumably the heavier the concentration of staphylococci normally found in the superficial layers of the skin anywhere on the body. As the concentration of staphylococci rises it is reasonable to suppose that the ease with which staphylococcal infections such as boils styes etc. occur is proportionally increased and therefore to treat recurrent staphylococcal conditions and to prevent further recurrence it would seem rational to aim at a reduction of the concentration of organisms in the skin and primarily in the scalp.

It is felt that by paying more attention to the condition of the scalp in

cases of staphylococcal skin infections the recurrence rate would be lowered, and in many cases the patients would be cured of troublesome conditions. It also seems possible that by paying more attention to the hygiene of the scalp and hair in naval ratings as a whole the incidence of skin infections as listed above could be reduced appreciably from the present figure of more than 20 per cent. of cases which must incidentally result in an appreciable loss of man hours per annum among ratings due to attendance for treatment in sick bays.

The treatment of established cases is the job of the medical officer but it is felt that too few recognize the association of pityriasis capitis with these varied staphylococcal lesions and are content with the treatment of lesions *per se*. The teaching for generations has been that in cases of recurrent boils or carbuncles the urine must be tested—with almost inevitable negative results—but in the simple operation of looking at a man's scalp or the shoulders of his coat for the tell tale white scales and recognizing that there is an associated pityriasis capitis which is a significant factor in the patient's condition is not widely taught.

Attention to the hygiene of the scalp in naval ratings not under surveillance of the medical officer is a matter for the rating himself encouraged by propaganda given in health lectures but the onus eventually falls on the rating's Divisional Officer and it seems regrettable that the emphasis on short hair seems to be in abeyance at the present time. There are three simple rules for the improvement of scalp hygiene—keep the hair short wash the hair frequently use the minimum of hair creams. In the interests of sickness rates these rules could well be brought to the notice of Divisional Officers on the widest possible scale.

Treatment

It must be recognized that pityriasis capitis is a recurrent condition unless treated continuously and the long term treatment of the condition is likely to be pursued more successfully if the medical officer treating the rating instructs him in simple language as to the cause and sequelæ of "dandruff" so that the rating will treat his hair and scalp intelligently long after he has passed from the surveillance of the sick bay. The impression that long greasy hair is smart must be shattered from the beginning and the medical officer should insist that the man has his hair cut short at the beginning of treatment. The man is then instructed to wash his hair at least three times per week for the next fortnight and from then onwards twice per week whilst the use of hair creams is discouraged or restricted to the minimum where it is necessary for a tidy appearance.

If there is any crusting or excoriating of the scalp it is wise to prescribe a shampoo of which there are many that can be made up simply and quickly in even a small dispensary.

The spirit soap shampoo has many years of successful prescription to its credit.

(1) ℞ Soft soap ½
Tinct. lavand. Co. ½
Spirit methylated ½

The most modern detergents can be used as follows:

(2) ℞ Cetavlon 5 per cent
Oil of cade 5 per cent
Spirit ad 100

the oil of cade adding its anti-pruritic and antiseptic.

A cream shampoo of proprietary standard which I have found to be a great success and gives a most satisfying lather can be made up as follows:

(3) ℞ Teepol 1 per cent
Lanolin 7 per cent
Glycerine 7 per cent
Lanette wax SX 1½ per cent

When using shampoo the application of an ointment or cream such as Pragmatar or Genatosan Dermatological Cream No. II to the scalp night and morning gives the best results. A useful ointment consists of:

℞ Ung. acid. salicyl. } aa ℥ ss
Ung. sulphuris }
Paraffin molle ad ℥ iv

A salicylic acid lotion can be used when the infection appears to be under control and the patient instructed to apply it daily, but it must be emphasized that no lotion will cure pityriasis capitis without repeated washing of the hair and the main advantage of a lotion is that it effects some control. It dries the hair and is therefore useful in men of hair creams which are held in such high regard by many patients.

℞ Hydrarg. perchloride 0·5 per cent
Acid salicylic 4 or 5 per cent
Tinct. quillaia 4 per cent
Ol. rosmar. 2 per cent
Tinct. lavand. q.s.
Spirit ad 100

It is not proposed to discuss the treatment of any of the miscellaneous conditions listed above with one exception and that is otitis externa.

This condition would seem to be a seborrheic dermatitis of the external auditory meatus in the majority of cases. Other types of infection of this area must and do occur just as they occur on other areas of the skin, but the great majority of cases seen are probably seborrheic in origin. The association of this condition with bathing, especially in swimming pools and in the tropics, is probably due to the fact that the water supplies the moisture for an ideal culture medium in the confined space of the external auditory meatus. It is therefore quite useless to treat the external ear hoping for a permanent cure without eradicating what amounts to a focus of infection: the associated pityriasis capitis, but due to the peculiar situation of the infection it is felt that certain other special precautions should also be taken.

All cases of otitis externa occurring at Eglinton are treated daily at an ear clinic until cured and a set routine has been evolved and is used for each

[illegible] The [illegible] body [illegible] [illegible] microscopic [illegible] is [illegible] [illegible] not [illegible] a gauze [illegible] soaked in 5 per cent aluminium [illegible] [illegible] daily for seven days By this time the ear is usually dry and hard [illegible] are present daily wicks of Cutty Borax in Glycerine B P for three days will soften this and allow removal as much scale as possible being [illegible] [illegible] [illegible] A wick soaked in 10 per cent chloroquin [illegible] [illegible] glycol is next inserted and left for forty eight hours after which [illegible] is nearly always healed but daily inspection for the next week should be carried out At any sign of relapse the routine should be [illegible] again from the beginning

During this intensive treatment the patient receives treatment to his scalp and careful watch is kept to see that dandruff is disappearing and that the patient continues to the three rules for a healthy scalp

Under this treatment few relapses occur on this station whilst many chronic cases are apparently cured and it is felt that nothing short of this vigorous regime will suffice in an often indolent condition

SUMMARY

Attention is drawn to the close association of staphylococcal skin infections such as furunculosis with pityriasis capitis (dandruff) of the scalp

During the period of six months 13 per cent of cases seen in the sick bay were staphylococcal skin conditions and it is felt that by the vigorous pursuit of scalp hygiene amongst naval ratings this very high sickness rate could be appreciably reduced It would seem that service medical officers do not always recognize the association of pityriasis capitis with many cutaneous conditions and it is suggested that the treatment of the cases should be [illegible] in conjunction with treatment of the scalp

Treatment of the scalp to cure pityriasis capitis and to prevent recurrence is given and a scheme of treatment of otitis externa is described in detail

---

A CASE OF TUMBU DISEASE

BY

Surgeon Commander P G BURGESS, R N

This case is being recorded in full although this particular form of sub[illegible] furunculosis myiasis is common in Central and West Africa it occurs only in that [illegible] and will therefore be unfamiliar to the great majority of medical officers

The disease is caused by the larva of the Tumbu fly This fly deposits its [illegible] on the ground and from them the larvæ emerge and bore their way into the tissue by means of mouth hooks

History—An officer aged 38

[illegible] reported with seven boils six behind the left knee and one on the left [illegible] This had been preceded by a "pricking sensation under the skin A few days [illegible] noticed that he could feel something moving under each boil There was con

siderable pur[illegible] purulent fluid exuded from an apert[illegible] through su[illegible] h Parke could be seen After [illegible] had com[illegible] [illegible] was filled out each with a sculpt[illegible] healed readily [illegible] suppuration

A practitioner in Freetown told me that he cut short the [illegible] the disease by smearing vaseline over the lesions as soon as the [illegible] appear This cuts off the oxygen supply to the larvae which [illegible] surface enabling them easily to be squeezed out

The infection in this case had probably been caught from child[illegible] officer had sent some white shorts to be washed ashore in Lag[illegible] carefully supervised the natives spread clothes in the ground to dry [illegible]

COMCOMLY RETURNS HOME

Comcomly was Chief of the Chinook Nation inhabiting the country at the mouth of the Columbia River in N W America early in the nineteenth century

Dr Meredith Gardner a young naturalist of great talent known to the scientific world by several papers on mineral and other subjects was sent by the Hudson s Bay Co in 1834 to the region of the mouth of the Columbia to help combat an epidemic which had decimated the native population and caused the death of Chief Comcomly

Dr Gairdner was a friend of the distinguished naval medical officer explorer and naturalist Dr John Richardson who was serving in the Royal Naval Hospital Haslar at that time Dr Gardner sent the head of Comcomly to Dr Richardson with the following letter

Oahu Sandwich Isles
31st November 1835

Dear Sir

I wrote to you from the Columbia in September last and recently add these few lines to inform you that the accompanying head is still boxed up Comcomly the old chief of the Chinook Nation at the mouth of the Columbia [illegible] four or five years ago You must have heard of his character for his great influence and [illegible] among the Columbia By his ability cunning probably aided by the [illegible] and his tribe [illegible] and influence which [illegible] districts of Columbia below the first rapids 151 miles from the sea Which the phrenologists look at the frontal development which will be [illegible] the Columbia I will endeavour to procure you the whole skeleton I could have [illegible] one some years ago not however in the state of health we are now in but [illegible] head as [illegible] which died of [illegible] Indians all on a mound After the [illegible] or rubbed with oil or any gummy substance they are partly smoke dried painted with ochre and water and capped in several folds of robes they are then deposited [illegible] canoe which is placed on a stage the head about 7 feet from the ground and there [illegible] attain the most perfect state of exsiccation though very imperfectly shut I left the weather (the climate is severe at for six months of the year) After remaining in [illegible] position for three or four years—as much be the relatives remove their [illegible]

[illegible] I assure you no small [illegible]

I remain
Dr Sir
Yours [illegible]
M [illegible]

[illegible] of consumption at Ocha[illegible] [illegible] it was not practical

[illegible] in the dried state mentioned but was [illegible] [illegible] Dunbrack The moisture commenced to become [illegible] five or six months notwithstanding a liberal application of corrosive sublimate it was macerated and the brain removed (*vide* letter [illegible] 1847 Haslar Museum) The distortion mentioned here was probably [illegible] a custom of flattening which was done to aristocratic Chinook Indians in their infancy

Comcomly's skull remained in Haslar Museum and was one of the very few historic objects that were saved when the Museum was demolished by [illegible] in 1940

In the year in which Comcomly had lived and died a small city now exists—Astoria Oregon U S A Astoria is the site of the first American settlement west of the Mississippi founded in 1811 by the American Fur Co under John Jacob Astor

In 1951 the Clatsop County Historical Society of Astoria having discovered that Comcomly's skull was still in Haslar asked to have it returned as it was considered to be a most interesting and important relic of the Chinook tribe of Indians now almost extinct This seemed a reasonable request and the Medical Director General readily agreed to allow Comcomly to return to the land of his fathers

The skull was carefully packed and arrived safely in Astoria on 31st December 1952 It is now in a special showcase prominently displayed in the Clatsop Historical Museum

The return of the skull to Astoria caused something of a sensation amongst the descendants of the Chinook Indians who now propose to raise a monument to the memory of Comcomly on the north shore at the mouth of the Columbia river

Reviews

[illegible]

is [illegible] how many ships [illegible] the opport[illegible] experience?

The technique [illegible] dangers and [illegible] are mentioned [illegible] authors [illegible] into the [illegible] blood stream [illegible] occur during [illegible] pressure [illegible] paravertebral [illegible]. Some [illegible] an idiosyncrasy to the injected drug [illegible] tration of adrenaline being added [illegible].

The technique [illegible] block [illegible] and there is an interval [illegible] in the [illegible] could be [illegible]. The [illegible] for the [illegible] strengths.

The book should [illegible] for the D.A.

Aids to Medical Diagnosis. By [illegible] Sutton, M.C., M.D., F.R.C.P., Physician, United Bristol Hospitals; [illegible] Teacher in Medicine, University of Bristol; Cardiologist, Ministry of Pensions. [illegible] Edition, 1952. Pp. viii + 346. Illustrations 45. London: Baillière, Tindall & Cox. Price 7s. 6d.

The Student's Aids series is so well known that the shape, size and excellent printing of this volume call for no special comment. In its 346 small pages there are nine chapters on the diseases of the various systems [illegible] on the encephalogram. There is no attempt at condensation by tabulation or other device, indeed the style of presentation is that of a full scale textbook. It is perhaps noteworthy that the publishers describe the series as "Small Text Books". That [illegible] impossible adequately to cover the field of medical diagnosis in this space is obvious, but the author is to be congratulated on this thoroughly revised example of *multum in parvo*.

Nurse's Medical Dictionary. By Margaret Hitch, S.R.N. Foreword by Sir Cecil Wakeley, Bt., *K.B.E., C.B.* Thirteenth Edition, 1952. Pp. 802. London: Baillière, Tindall & Cox Ltd. Price 5s. 0d.

The fact that this dictionary, now in its thirteenth edition, has been reprinted within a little more than a year of the previous edition speaks for itself. Only minor corrections and additions have been called for but the Appendices on "The Poisons Act" and on "Antibiotic Drugs" have been entirely rewritten.

There is such a wealth of information contained in this dictionary that there was a danger of it becoming too bulky. This has been avoided in the new edition by printing on especially thin paper so that it still lives up to its name, a "pocket" dictionary.

Estuary Saga. By Jeffery G. Harrison. 1952. Pp. xi + 121. London: H. F. & G. Witherby Ltd. Price 12s. 6d.

This may appear to be a peculiar book to review in a medical journal as its contents have nothing to do with medicine. The reason for its inclusion becomes clear when the author is introduced as a Surgeon Lieutenant, R.N.V.R.

The subject of the book is the author's experiences during [illegible] (1949–51) in the Elbe Estuary in Germany. The Elbe being one of the largest resorts of duck and geese in Europe, this was a most fortunate appointment from his point of view as he is an enthusiastic wildfowler and naturalist.

The author first introduces us to the estuary, its banks, islands and marshes, and thereafter to the birds themselves. He takes us with him on several shoots, describing not only his successful bags but also his failures. One gets the impression that when he comes back empty handed he [illegible] as pleased with his band [illegible]. The book ends with a detailed description of the birds, their distribution [illegible].

The book is well illustrated with pen and ink drawings and [illegible] paintings by the author. The photographic illustrations are not so well reproduced. The subject

of flights [illegible] or flat marshes in poor light to [illegible] itself to [illegible] photogr[illegible]

The [illegible] enthusiastic foreword by Vice Admiral the [illegible] President of the Royal Naval Bird Watching Society

[illegible]

BOOKS RECEIVED

[illegible] N Butler 10th in a series of operati[illegible]
Mar[illegible] World War II
Mi[illegible] Sol[illegible] 11th in a series of op[illegible]
U.S. Mili[illegible] World War II

We acknowledge with thanks receipt of the following publications

Annals of Tropical Medicine & Parasitology *Australian Journal of Exp[illegible] Biology & Medical Science* *British Medical Bulletin* *British Medical J[illegible] Bro[illegible]* *Bulletin Union Int[illegible] Services de Sante* *Bulletin of the World Hea[illegible] Organization* *Chronicle of the World Health Organization* *German Journal of Me[illegible] Services* *Guy's Hospital Gazette* *Journal of the Irish Medical Association* *Journal of the Royal Naval Scientific Service* *Journal of Sheikh Medical Association* *Medical Journal* *Medical Journal of Australia* *Medical Journal of Osaka* *Medical Press* *Middlesex Hospital Journal* *Military Surgeon* *Proceedings of the Staff Meetings of the Mayo Clinic* *Russkii Meditsinski Zhurnal* *St Mary's Hospital Gazette* *St Thomas's Hospital Gazette* *Tokohu Journal of Experimental Medicine* *Tropical Diseases Bulletin* *United States Armed Forces Journal* *United States Medical Department Bulletin* *Universal Journal of Surgery* *Yokohama Medical Bulletin*

News of the Service

OBITUARY

Surgeon Captain P. N. BUTTON, R.N. (Rtd.)

We are indebted to Surgeon Commander J. L. S. Coulter for the following appreciation:

I have to [illegible] regret in the Winter number of the Journal of the R.N. Sc[illegible] P. N. Button, [illegible] in October 1952.

I feel that it would be most fitting in place of [illegible] to pay a tribute to his [illegible] officer for the [illegible] work which he performed as Senior Medical Officer of Coll[illegible] during the Second World War. When studying naval medical records in the [illegible] of compiling the Naval Medical History of the War, I have been specially impressed by the number of references to some of them in glowing terms which ships medical [illegible] have made to the valuable assistance rendered by Button, an original member of the [illegible].

I well remember my self coming into harbour at Gibraltar at daybreak with [illegible] hospital ships and survivors following prolonged action off the North African [illegible]. When we came alongside Button was waiting with his [illegible] staff, stretchers, [illegible] and all the [illegible] etc. He was the first man on board and he promptly [illegible] the [illegible] casualties and survivors at a time when [illegible] at the end of our [illegible].

This experience would seem to have been shared by many other medical officers and it was always a source of great comfort to us all to know that Button was always early and in time, to relieve us of our burdens at any hour of the day or night.

We regret the following deaths and extend our sympathy to their relatives.

Surgeon Captain F. COCK, R.N. (Rtd.) died on the 23rd December 1952. Born on the 11th August 1883, he qualified in 1911 and entered the Royal Naval Medical Service as Surgeon on the 19th May 1911. He was promoted to Surgeon Lieutenant Commander May 1917 and Surgeon Commander in May 1923. He retired in the Retired

[illegible] the 11th [illegible] 1933 but continued [illegible] On [illegible] he was granted the [illegible] 11th August 1933

Derrig, the First World War Surgeon Captain [illegible] *Lord Hoadoch* and *Tiger*. In World War II he [illegible] of Surgeon Commander R.N. Barracks, Devonport [illegible] from June 1939 until June 1941 when his appointment [illegible] to the Retired List

Surgeon Captain [illegible] STAR *OBE* R.N. (ret.) [illegible] Birmingham on the 15th April 1870 he qualified in 1894 [illegible] Naval Medical Service as a Surgeon in May 1895. He was promoted [illegible] 1903 [illegible] Surgeon Commander in May 1909 and was placed [illegible] the 15th April 1922 with the rank of Surgeon Captain.

During World War I Surgeon Captain Stanley [illegible] H.M. [illegible] and the R.N. Hospital, Deal, and in 1919 was awarded the *OBE*. [illegible] appointments. He was employed as Chief Medical [illegible] 1922 until 1927.

Surgeon Captain J. R. BRENNAN R.N. (RET.) [illegible] H.M. [illegible] in the 8th September 1894 he qualified in 1917 [illegible] R.N. [illegible] Service as a Temporary Surgeon Lieutenant on the 8th March 1918. He was [illegible] the Permanent List in February 1920 and was promoted [illegible] Commander in February 1924. Surgeon Commander [illegible] Captain in June 1943.

During World War II Surgeon Captain Brennan was [illegible] H.M.S. [illegible] and the R.N. Auxiliary Hospital, Ramhill. He was placed [illegible] List (Medical) on the 7th November 1944.

PROMOTIONS

To Surgeon Captain—J. Johnston, F. J. Mulder, W. V. Beach, *OBE*

To Acting Inferior Surgeon Commander—R. M. Darlow

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenant Commander (D) F. E. Reed, R.N., Emergency

ENTRIES FOR SHORT SERVICE COMMISSION

A. A. Davies, B.D.S., R. M. Middleton, L.D.S., J. W. I. Mark, M.B., B.Ch., M.R.C.S., L.R.C.P.

RETIREMENTS

Surgeon Commander J. A. Cusack, Surgeon Commander P. J. A. The O'Rourke, Acting Inferior Surgeon Commander J. F. Carr-Gau, Surgeon Lieutenant R. H. Longstoe, Surgeon Lieutenant J. J. Scannell, Surgeon Lieutenant T. A. D. [illegible], Surgeon Commander (D) S. J. Browe, Surgeon Commander (D) L. C. Bolt.

WARDMASTER OFFICERS

PROMOTIONS

To Acting Chief Petty Officer Wardmaster—S.B.C.I.O. C.M.X. 48836, H. Burton, *D.S.M.*

S.B.C.I.O. I. M.X. 49307, J. A. F. Lilley.

RETIREMENTS

Wardmaster Lieutenant K. A. J. Chapman, *M.B.E.*

Q.A.R.N.N.S

RETIREMENTS

Miss I. J. Lee, *R.R.C.*, Superintendent, Sister/Matron.

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Notice

Messrs Morley & Jones Limited Pharmaceutical Manufacturers, Guildhall Lane London S E 1 have introduced a new presentation of Furacin The point now introduced is for the treatment of otitis of bacterial origin Furacin Ear Solution Furacin is active against all the bacteria commonly found in acute and chronic otitis media and externa and in Furacin Ear Solution it is presented in a liquid hygroscopic anhydrous, and non irritant vehicle Furacin Ear Solution is available in 1 fl oz (28 c c) bottles with dropper

Notice

[redacted] to send in original [redacted] of new and [redacted] medical [redacted] and from ships and establishments [redacted] studies [redacted] to marriage and leaving the service [redacted]

All [redacted] communications published in the [redacted] Medical Service will become the property of the [redacted] publishing author declares when sending the article that [redacted] to himself Articles should be sent in duplicate

The Harvard system should be employed for [redacted] references being arranged in alphabetical order of the [redacted] names at [redacted] contributions Thus Smith F G (1935) *J roy nav med Serv* **22** 83 If [redacted] a reference to a publication should be cited by giving the [redacted] and in [redacted] the date thus Smith (1935) believed this to be due &c

All communications should reach the Editor on or before the first of the month preceding the date of issue Unless clearly written they should be typed in order to avoid mistakes and they should be addressed to The Editor JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE Monckton House Alverstoke Gosport Hants

The Journal is published quarterly four numbers comprising one volume

The subscription is 20s per annum (postage included) payable on 1st January of each year but should a subscriber wish to commence at another quarter he may do so by payment at the rate of 5s per copy All subscriptions are payable in advance Single copies can be obtained at 6s per copy Cheques or postal orders for subscriptions should be crossed Lloyds Bank Ltd and be made payable to the Manager JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, Monckton House Alverstoke Gosport Hants to whom all communications relating to subscriptions &c should be addressed

The payment of subscriptions by banker's order is recommended as it relieves the subscriber of the necessity of forwarding a cheque each year and simplifies the keeping of accounts

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THE EDITOR

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Journal
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Articles

THE HISTORY OF THE HISTORY

BY ONE OF THE EDITORS

THE United Kingdom Medical Series of the History of the Second World War will consist of some eighteen volumes two of which have recently been published These eighteen volumes will cover the clinical administrative and operational developments in the various spheres in which the Medical Branches of the three Fighting Services and the Civilian and Colonial Medical Services were engaged from 1939 to 1945 The Royal Navy will contribute two volumes of its own one which deals with Naval Medical Administration and the other with the Medical Aspects of Naval Operations

The first purely naval volume will be published during 1953 and the purpose of this short paper is to explain to the potential reading public something of the machinery which has existed for a number of years with the ultimate object of bringing into print for the benefit of posterity the outstanding features of naval medicine during the war years

The Medical Series is but a specialized section which exists inside the general framework of the History of the Second World War as a whole and which was founded early in 1942 The History as a whole is directed by a Department of the Cabinet Office which is the final arbitrator as regards the policy to be observed in the various specialized series of which the War History is composed

Soon after the History of the Second World War was conceived the production of its Medical Series was delegated to an Editorial Board This Editorial Board, which has existed ever since was composed of thirteen members under the chairmanship of an eminent member of the Civil Service Eleven of the members were all men of established reputation in the medical profession and included the Medical Directors General of the three Fighting Services and representatives of the Ministry of Health the Department of Health for Scotland the Government of Northern Ireland and the Medical Research Council The two remaining members were from the Cabinet Office In addition a permanent seat was held by the Editor in Chief of the Medical Series and the Board had the whole time assistance of a senior member of the Civil Service as its Secretary

Subordinate to the Editorial Board was appointed an Editorial Committee with the Editor-in-Chief as Chairman a membership of ten persons and a

[illegible] Secretary. The ten members of the Editorial Board [illegible] and the Editors of particular volumes of the Medical Series [illegible] the Board of the policy laid down by the Editorial Board.

In 1946 the United Kingdom and Dominions Official Medical Histories Liaison Committee was founded. The members of this Committee included representatives of the Dominions and also of the United States. The reason for this Committee being founded was to achieve and maintain a common policy of presentation to avoid inaccuracies and contradictions and to eliminate overlapping in the Medical Histories being produced by Governments other than the United Kingdom. Periodic meetings of this Liaison Committee have been held in Ottawa in Oxford in Canberra and New Delhi. The Naval Editor attended the first and second of these meetings.

It will be seen therefore that the initial machinery devised by the Cabinet Office consisted of an Editorial Board for the Medical Series with a subordinate Editorial Committee the latter being so to speak the people who so task it was actually to write and produce the various medical volumes. The Editorial Committee, in fact consisted of the various Editors. Originally the title of Editor was bestowed upon the Heads of the various Medical Services concerned and the members of the Editorial Committee were known as Sub Editors e.g. the Medical Director General of the Navy was regarded as the Editor of the Navy's volumes while the officer to whom the actual production of the History had been delegated was known as the Sub Editor and as such was a member of the Editorial Committee. But later the title of Sub Editor was abolished and the person actually doing the job was promoted to Editor.

From the beginning it was necessary that there should be an Editor in Chief of the Medical Series who would have charge of a special department which would be responsible for the production of the volumes concerned. Sensibly a former Chief Medical Officer of the Ministry of Health was appointed as Editor in Chief who fortunately for the progress of production has held this office ever since. Even more sensibly the Editor in Chief's Department was housed in and made an offshoot of the Ministry of Health. This procedure has always proved to be of great advantage as it has provided a Central Authority in a Civil Government Department which has been able to act on behalf of the various distinct Medical Services responsible for producing their individual Histories with avoidance of the separate long and tortuous administrative channels of each of these Services alone.

Each of the Fighting Services started the production of its Medical History ostensibly in the same way but in reality there were certain differences which were dictated by the wide variations and functions of the Navy Army and Royal Air Force. In each Service the Medical Director General as a member of the Editorial Board was responsible for producing the Medical History of his Service. Naturally he was not expected to write this History himself but was empowered with Treasury approval to delegate the work to a medical officer selected for the task. Here the similarity between the three Fighting Services ceased. The Navy and Royal Air Force Directors appointed a Surgeon Commander and a Squadron Leader respectively. The Army appointed a

Professor [redacted] Scottish University who though serving in the Army at the time of his appointment was continued as Editor of the Navy's Medical History throughout the war. His opportunity has undoubtedly meant that the Army's Medical History has been able to be produced more efficiently than in any case that of the Navy. Also the Professor appointed for the task by the Army was a person of high status and of known authorship ability. On the other hand certainly in the case of the Navy a tremendous loss of time has occurred through a number of changes of Editor occasioned by Service exigencies and also one death. Altogether the Navy has employed five Editors in turn which has meant that each medical officer holding office has had to begin by absorbing the commitments and background of the task a lengthy business which has always meant a delay of several months. In addition these naval Editors have necessarily lacked any academic literary or historical training so that each in turn has had to teach himself to write history while still virtually in apprentice.

But although the Navy's Medical History Section has frequently coveted the continuity of the Army's corresponding organization in fairness to our military colleagues it must be admitted that the Army's Medical History is much larger and more elaborate than the Navy's. This is only what would be expected as there is no doubt that during the Second World War the Navy's medical organization was smaller and less elaborate and altogether consistent with the unique character of the Senior Service itself. The Navy could never pretend that at any time during the war it was faced with those vast medical commitments and problems which the Army surmounted so ably time and time again.

In its preliminary planning the Editorial Board decided that the Medical Histories of the various Services should be composed of Clinical Administration and Operational Volumes. Furthermore it was decided that while each Service would be responsible for producing its own Administration and Operational Volumes the Clinical Volumes would be comprehensive. This meant that each Medical Service would be responsible for the collection and clearance of its own clinical material which it would then forward to the Department of the Editor-in-Chief. In the latter Department all this clinical material was then sifted and eventually combined into a number of volumes to cover all the clinical aspects of Medical History during the war years. For example the Navy Army Air Force and Civilian Medical Services would each collect everything possible on the subject of Burns. The Editor-in-Chief's Department would then prepare a comprehensive chapter on Burns from this wealth of material and would absorb it into one of the Clinical Volumes. In this way overlapping and repetition was avoided. For the purpose of producing the comprehensive Clinical Volumes an eminent Surgeon was employed in the Editor-in-Chief's Department as Clinical Editor of the Medical Series.

Likewise each Medical Service has been required to produce statistics and these too will be combined in a comprehensive Statistical Volume by the Department of the Editor-in-Chief.

It will [illegible] therefore that the terms of reference [illegible] have been fourfold

(1) To collect and forward to the Editor in Chief all the available clinical material of his Service

(2) Similarly to collect and forward the medical statistics of his Service

(3) To compile the Administration Volume or Volumes of his own Service

(4) To compile the Operational Volume or Volumes of his own Service

The navy began the task of producing its Medical History by establishing a History Section inside the Department of the Medical Director General Thus was done ten years ago and at this point it must be mentioned that problems of economy arose mainly concerning man power This History Section naturally had to be staffed with personnel adequate in quantity and also of the right quality To find a medical officer as Editor was easy enough but to obtain his civilian staff was not so easy as in general the Section had to be developed from the resources available inside a Medical Department whose working capacity was already stretched to the full limit Obviously staff had to be found and it was found both locally and by importation from other Admiralty Departments How this was done is not a matter to be discussed in this paper suffice it to say that the staffing of the Navy's Medical History Section has always tended to present something of a recurring problem

The first step taken by the first naval Editor was to plan the Clinical Administration and Operational Histories in outline This itself was a lengthy task but the plans were prepared in a most capable manner and ever since have been adhered to as much as possible by subsequent Editors

The next step was the collection of clinical administration and operational medical material Obviously each of these main subjects could not be dealt with in turn because this would have meant that the Navy's Medical History would have taken approximately fifty years to compile Incidentally this figure of fifty years has not been quoted rashly but is mentioned with some authority after accurate forecasting The collection of the three types of material had therefore to be organized concurrently

As regards the collection of clinical material a large number of serving naval medical officers was approached and each expressed his willingness to contribute a paper on the particular clinical subject of which he was acknowledged to be an expert This list of promised contributors was very long indeed and extended from the Navy's Civil Consultants down to even the occasional humble surgeon lieutenant R N or R N V R who was known to have had special experience of a particular clinical subject during his war service

There is no doubt that to plan the collection of clinical material in this way was correct and in retrospect it is difficult to see what else could have been done However memories are short and while a large number of promised contributors met their commitments most nobly others left the Service at the end of the war with their obligations unfulfilled Every effort was made to persuade these defaulters to implement their promises and the Board of Admiralty even went so far as to approve a scheme whereby retired medical officers could be re

munerated for contributing clinical material on subjects of which they had specialized knowledge. Nevertheless it is of some interest to record that only one retired naval medical officer has had to be so remunerated.

By 1948 it began to be obvious that the obligations of many promised contributors would never be fulfilled and although the Editor in Chief's Clinical Editor largely by virtue of his status in civil life was able to exert his powers of persuasion with some success a time came when some of the promised contributions had to be regarded as extinguished by long delay. But in spite of these defaulters a vast amount of clinical material was collected and eventually absorbed into the appropriate Clinical Volumes produced by the Editor in Chief's Department.

Meanwhile the collection of material was begun for the Navy's Administration and Operational Volumes. Broadly speaking this involved some five years of collecting, reading, docketing and indexing the medical details extracted from all the available records inside the Admiralty. These records included Battle Summaries, Action Reports, Muster Books and involved the reading of no less than 26 000 medical officers' journals.

These years represented a period of humdrum monotony for the Navy's Medical History Section during which nothing but research could be attempted and a great deal of work was carried out of a preparatory nature but which as yet seemed to show little in the way of a final result. In fact it was not until 1948 that this period of research could be considered sufficiently advanced to permit the first attempt to be made at weaving the information revealed into the final historical narrative which was needed for publication. Only then had a time come when, at long last, it was possible to feed some thousands of medical records into one end of the Editor's mental mincing machine in the hope that a readable story of the Navy's Medical History during the war would emerge at the other end.

In relation to the production of this continuous narrative it is a tempting proposition to suggest that history can be more easily written contemporaneously with the events as they occur. But experience proves that in the case of history such an attempt will certainly be doomed to failure. Such a procedure is more likely to succeed in the case of fiction because as many authors have admitted once the characters in their books have been created the characters have themselves worked out the story. But unfortunately history must be factual and dare not be recorded until all the facts are fully known. Isolated historical incidents must not be considered alone but require the Historian to be patient and to wait until such time as these isolated incidents can be fitted into the more comprehensive picture of later events. In the case of a war history the patience must be even greater because so many of the facts and their full implication cannot be revealed until the war is ended. This then is the main reason why history takes so long to write.

Also the facts of history are liable to be interpreted in different ways by different authors which is the reason why many authors have written a history of most things while few authors have written *the* history of anything.

The narrative of the Navy's Administration Volume took the best part of

[illegible] completed form suitable for publication The volume [illegible] the hands of H M Stationery Office for printing and it should be [illegible] during 1953

[illegible] with the closing chapters of the Administration Volume the [illegible] the Naval Operational Volume was begun This narrative will [illegible] in manuscript form by the end of 1953 and the Operational Volume should be published about nine months later

Prima facie the unversed observer might well consider himself entitled to suggest that the compiling of these narratives has involved an unnecessary length of time As a matter of fact many critics have already advanced their opinion that the task could have been completed long before now

Here again these critics must be reminded that the task has been the writing of history as opposed to fiction Moreover it is *medical* history which [illegible] presents its own difficulties because as any Judge will confirm few medical experts have ever been able to agree about anything! Another factor to be taken into account is that this is not merely a Medical History of the War it is the *Official* Medical History of the War As such it is expected to record the factual details of *what actually happened* which is very different from the kind of thing which the adverse critic *thinks* happened or worse still thinks *ought* to have happened

This then goes some way towards explaining the time factor in producing the final narrative But on to this explanation must also be grafted the whole story of the technical administrative and political machinery which of necessity has to operate upon every word which is written In other words it is as well to trace the narrative from its beginning up to its final publication before suggesting that our History could have been produced more quickly

As has been explained the continuous narrative of the Navy s Medical Administration and Operational Volumes has been compiled from many thousands of official records Adhering to a plan the narrative has first to be written in the form of a preliminary manuscript of particular chapters For example the Navy s Administration Volume consists of sixteen chapters which cover Naval Medicine between the Wars Medical Administration during the Second World War Medical Aspects of Recruiting the Royal Naval Sick Berth Staff Queen Alexandra s Royal Naval Nursing Service the Women s Royal Naval Service Naval Medical Transport Naval Hospital Ships the Royal Naval Blood Transfusion Service Neuro psychiatry in Naval Medical Administration the Provision of Medical Stores and Equipment Preventive Medicine the Naval Air Arm Medical Establishments in the United Kingdom and Abroad and the Work of the Dental Branch of the Royal Navy Once more as in the case of the collection of material during the phase of research so it is in the case of writing the chapters of a narrative Tempting as it might be to suggest that the quickest way to write sixteen chapters would be to begin at Chapter I and work through to Chapter XVI in practice this would be impossible The reason is that half way through Chapter I would probably be found a gap in the records calling for further research While waiting for this gap to be filled it is best to get on to Chapter II where yet further gaps

will almost certainly be discovered. The result is that strange as it may seem the last chapter may be and actually was finished long before the first. It will be seen therefore that the unfortunate Editor always has to be something of a mental grasshopper jumping from one chapter of his narrative to another.

Each piece of the narrative has been dictated and taken down in shorthand and has then been typed and corrected. Frequently this has had to be done several times before even a satisfactory preliminary narrative has been compiled. Incidentally the typing apart from its technical requirements also calls for some expert knowledge because it must conform to a plan laid down for all the Official War Histories. For instance capital letters roman numerals headings italics etc. must all obey certain rules. Punctuation too must conform to plan and this alone is a separate nightmare to the inexperienced Editor. Many of these technical details amount almost to a literary labyrinth which is certainly not conducive to speed of production. Neither are these details always easy to remember and frequently they seem to be incorrect at first. e.g. it is tempting to write

All Naval Hospitals and Sick Quarters.'

This must be written

All naval hospitals and sick quarters

Or again

The Base at X had a Royal Naval Sick Quarters. The local medical staff consisted of a Surgeon Rear Admiral and two Surgeon Captains R.N. one of whom was Base Medical Officer.

Thus must be written

The base at X had a royal naval sick quarters. The local medical staff consisted of a Surgeon Rear Admiral and two surgeon captains R.N. one of whom was Base medical officer.

Once the chapter is completed in typescript it is forwarded to the Department of the Chief of Naval Information where it is scrutinized as regards its suitability for release for publication and where it is also dealt with as regards security on behalf of the Director of Naval Intelligence. Once cleared in this way the manuscript is returned to the Medical History Section with approval for ultimate publication either as it stands or possibly subject to certain deletions and amendments. In point of fact these latter have been very few and have always been justified when recommended by the co-operative members of the staff of the Chief of Naval Information whose guidance has always been most valuable when attempting to produce an historical story which aims to help everybody and to harm nobody—by no means an easy feat!

The chapter now released for ultimate publication is next forwarded to the Department of the Editor-in-Chief. Here it is now subjected to a process of expert editing and it is also carefully compared with corresponding chapters produced by the other Medical Services. This is essential in order that there shall be no contradictions and in this respect it is surprisingly easy for the Medical Branches of the three Fighting Services to give three entirely different

interpretations of a single medical incident in a particular area. Each chapter is also 'cross referenced' by the Department of the Editor-in-Chief in relation to other volumes of the Medical Series.

In due course the Editor in Chief's Department becomes possessed of all the chapters of the particular volume in manuscript form and several copies of a bound manuscript volume are now prepared.

The journey is now at about its half-way mark. The manuscript volume is next scrutinized by the Joint Services Security Committee and this may mean further deletions or amendments. Having survived this hazard the volume is now again edited from beginning to end by an official of the Ministry of Health on behalf of the Cabinet Office. This is a rather unpredictable phase but one which is conducted most expertly and aims at leaving nothing to chance.

At this point the manuscript volume has gradually risen from the humble sphere of the Navy's Medical History Section to the high level of the Cabinet Office and on this level it now finds its way back once more to the Admiralty for Board Approval. This entails further detailed scrutiny by any number of separate Admiralty Departments all or any of which may have comments to make and even further deletions or alterations of the text to recommend. It will be noted that by this time the Medical History Section has long ceased to have any connexion whatsoever with the volume. But the Section may now be required to make such alterations of text etc. as may be considered desirable in accordance with the recommendations of other Admiralty Departments. That lay departments should be empowered to behave in this way towards a volume of Medical History at first seems puzzling but experience has proved it to be very necessary that these other departments should do this for the simple reason that the volume has been written by doctors and the interpretation of certain naval events has been made only by doctors. Obviously these interpretations might be gravely at fault and it is highly desirable that they should be corrected by those departments who have expert knowledge of the true background of naval warfare.

The manuscript volume is finally given the official blessing of Their Lordships and finds its way back to the Cabinet Office whence it descends once more to the level of the Department of the Editor in Chief. H.M. Stationery Office now enters the picture and a long period of indexing and galley proofing begins. Each galley is sent to the Naval Medical History Section to be corrected. This is a heart breaking task which requires the Editor to have a knowledge of the various hieroglyphics employed in the world of literary publication. At this time the Editor inevitably suffers from insomnia and numerical nightmares because he soon finds that it is always possible that errors exist in the figures printed in galley form. Once one such error is discovered lack of confidence is bred in any other figures in the text and the result is that the Editor and his staff soon find themselves involved in doing calculations all over again.

In relation to the question of figures in Official Histories it is of some interest to note that in contrast to the old story which says that 'lies are of three kinds viz. lies, damned lies and statistics', historical figures quoted in these volumes are official figures. This fact is frequently disconcerting to an Editor who,

after [illegible] produces what he imagines to be [illegible] figure [illegible] to find that it falls short of or else greatly exceeds the official figure which already exists However this is a subject which is best carried no further in this paper and in any case official figures of a Government Department have the great advantage that they cannot be questioned neither can the Crown be required to explain how they were arrived at !

At long last the work is nearing completion The corrected galleys are returned to the Department of the Editor in Chief and the volume next appears in the form of page proofs which the Navy s Medical History Section is once more required to correct During this stage of page proofs further and final scrutiny is conducted by a representative of the Ministry of Defence The corrected page proofs are again returned to the Department of the Editor in Chief and they next reappear as bound proof volumes copies of which are distributed to the Editors of all the Medical Series Each Editor is given a period of fourteen days in which to raise any comment on the text of the volume as it applies to his own Service e g the Editor of the Army Volumes might consider that some statement about the Army Medical Services in the Naval Volume should be modified and so on If no Editor comments adversely within the time limit set the Editor in Chief s Department advises the Cabinet Office to authorize the final printing binding pricing and publication of the volume by H M Stationery Office

This then is the broad outline of the history of the Navy s Medical History and it will be seen that every possible measure has been taken to achieve perfection and the publication of an accurate record of what was done by our medical officers nursing sisters and sick berth staff during the Second World War Our History is thin in places This is because while there was a superabundance of records of certain naval events in other cases records were scanty or even non existent Such lack of records is frequently evidence of a total loss of ship and lives

Official photographs too have been rather disappointing and it is surprising how few were produced which lend themselves to reproduction in the Naval Volumes

However the Navy has done its best to produce what it believes to be the truth the whole truth and nothing but the truth At the same time the Navy s Medical History of the War does not pretend to be anything more than *a* history As the potential reader will see for himself in his admirable Foreword to the Navy s Administration Volume Surgeon Vice Admiral Sir Edward Grosvenor has pointed out that if in years to come any person feels impelled to write *the* Naval Medical History of the War as opposed to *a* history he will be deserving of congratulation—and sympathy !

Finally the last of the Editors would be glad to remind potential readers that in any case in the words of Henry Ford History is bunk !

H.M. DOCKYARD, SHEERNESS

BY

Surgeon Lieutenant-Commander J. GLASS, R.N.

There were no established dockyards in England until the establishment of the navy under a Board of Admiralty as Commissioners of the navy in the reign of Henry VIII.

The first Royal Dockyard was constructed at Woolwich and then in succession dockyards were established at Portsmouth, Deptford, Chatham and Sheerness.

The *Harry grace de Dieu* was launched from Woolwich in 1512. Deptford was established about 1513. Portsmouth expanded as a naval headquarters and fleet rendezvous when the dockyard began there in 1540. Chatham dockyard was founded in the reign of Elizabeth I and Sheerness dockyard in the period of Charles II.

The yard at Sheerness in 1665 began as an adjunct to Chatham yard. In comparison to size and age of the other Royal Yards then Sheerness is a comparative youngster yet she has already seen a formidable cavalcade of Fleets in her harbour and many Admirals and sailors trod the cobbled roads of the dockyard to join ships. Ships bound for the channel eastward from the estuary mouth of the Thames and Medway to embark on adventures which in great measure undoubtably shaped the destiny of Britain.

One hundred and forty years ago work was commenced on an extensive project the complete reconstruction of Sheerness dockyard. This work included the construction of five dry docks, three basins, a large barracks, storehouses, workshops, sawmill and auxiliary buildings all contained in an area of 60 acres.

On the 5th September 1823 the southern half of the dockyard was completed and opened for the public service by the Duke of Clarence as an independent yard.

The actual origin of the dockyard began two years before the signing of the treaty of Breda (1667) when seaward defences were re-established and work on a Royal fort was begun at Sheerness at a site now known as Garrison Point. It was completed in 1669. Formerly a blockhouse had been in existence there since the days of Elizabeth I. During these defensive preparations against the Dutch Chatham dockyard received instructions to equip Sheerness for the purposes of cleaning ships hulks and to supply men to work there. The object was to shed the load of work at Chatham for ships of the Channel Ports which did not require to be laid up for extensive periods.

Samuel Pepys was the instigator of this plan and he wrote in his diary (1665). To Sheerness where we walked up and down laying out the ground

to be taken in for a yard for the provision for cleaning and repairing of ships, and a most proper place it is for the purpose for it is a much better place than Chatham

The first vessel built at the yard was a hoy called the *Transporter* launched in 1667 The novel way of housing the workmen and their families who had come from Chatham was achieved by utilizing the hulks of old vessels which were imbedded in the muddy shore at the proposed site of the yard to be The decks of these hulks were then connected by planked bridges The next development was the erection of houses and the decks were arranged in rows given the names of streets some of the larger known as King Queen Prince and George Street

Later the hulks were painted blue and as the yardmen transferred their homes from the hulks to more suitable permanent accommodation ashore in the neighbourhood of the yard they used the blue painted timber and the yard concession of old bits of timber known as chips as a supplement to pay for their own homes To this day the residential area of dockyard employees adjoining the yard is known as Bluetown

With the easing of the warlike state or threat of war the yard was given over to a care and maintenance party in the 1680s and the main body of workmen and their families returned to Chatham

In 1708 the yard reopened and some wooden dry docks were constructed and more storehouses erected Within a few years again a further decline in fortune stopped expansion and during the first half of the eighteenth century large quantities of stores were looted from the yard and morale was at a low ebb amongst the few retained storekeepers and watchmen

The need arose once again in 1763 for an active dockyard on the North Sea and Sir Thomas Slade drew up plans for the further development of Sheerness No noteworthy achievements resulted However it is known that in the latter half of the eighteenth century 64 gun ships and frigates were constructed Some units of the fleet under Lord Howe were fitted out at Sheerness for preparations against the French fleet which resulted in their defeat off Brest on the glorious first of June 1794

Another event of the latter eighteenth century was the Mutiny of the Nore which took place in the early part of 1797 and began and ended off Sheerness It sprang from a very deep sense of grievance for the treatment of the lower deck in those days was harsh in the extreme A large number of serving men press ganged to serve afloat and the continued pressure to retain them was no popular procedure to be long endorsed or endured The immediate good nature of the seamen had displayed itself in a gala atmosphere of the early days of the mutiny but for some of them at least the short lived insurrection ended in grim tragedy In the early days of the mutiny the sailors marched ashore through the dockyard enlisting sympathy of the yardmen and of the soldiers at garrison point After a few months following the mutineers refusal to meet the Admiralty deputation local opinion and the yardmen became strongly opposed to the mutiny and on 14th June of that year the *Sandwich*

flagship at the mutineers came into Sheerness [illegible] and [illegible] ended the mutiny

The ultimate consequences for the navy and therefore for the dockyards were altogether good as many injustices and hardships were remedied and legitimate grievances dealt with shortly afterward

In 1806 a report to the Committee of Naval Revision concerning Sheerness stated that the hulk of the yard may be said to be a wreck and that no dockyard in the kingdom is worse arranged

After various plans were considered, John Rennie and Joseph Windby in 1808 were asked to report what works were necessary to render Sheerness Dockyard complete for repairing frigates and similar classes of vessels of war Their emphatic advice to the Admiralty was to scrap everything and start afresh Finally in 1813 Mr Rennie was given approval to begin work on the improved plan which is the basis of the present dockyard

In 1823 as already noted, the southern half of the yard was opened by the Duke of Clarence The ceremony included the towing of H M S *Howe* 120 guns into No 1 dock followed by a grand dejeuner held aboard her

The following year work began on the northern part of the yard and this was completed in 1830 During this latter construction period Admiralty House was erected at garrison point as a palace for the Duke of Clarence who later became familiarly known as William IV the Sailor King From 1830 until 1905 Admiralty House was the residence of the Commander in Chief The Nore In 1832 the first Captain Superintendent of the Yard was appointed Before that the senior officer of the dockyard was known as a Commissioner

In a part of the Bonhouse at present used as a naval storehouse there is a fine model of the dockyard designed by John Rennie and by which the work of the reconstruction was actually carried out It is built to a scale of 1/8 inch to the foot (1/96th scale) and every pile is shown on which the dock walls buildings docks etc are carried

Mr H M Setchill a Civil Engineer of the Dockyard in 1909 drew up some details which are now framed and placed near the model describing in more particular detail the nature of the reconstruction Some extracts are noted

This is the original working model by which work of reconstruction of Sheerness dockyard in the years 1813–1823 was actually carried out

The foundation for almost the whole of the dockyard is made by piling as shown on the model the subsoil being running silt The work was commenced in the latter part of the year 1813 the first pile being driven on the 23rd November for the first division of the coffer dam of the river wall which was finished on the 18th August 1814

On this date the first stone of the river wall was laid by Viscount Melville, who was then First Lord of the Admiralty

The engineering works were designed by John Rennie who died in October 1821 The work was completed by his son also named John Rennie who was knighted in 1831 on completion of London Bridge from his father's design

The architectural works were designed by Mr E Hall Civil Architect to the Admiralty

Additions have been made to this model showing [illegible] made and new works constructed at various dates

The main facilities comprised a wet basin [illegible] and 1 slipway in addition to various workshops [illegible] residential buildings The cost of the works was over £1 million [illegible] large undertaking in the 1820s when workpeople were paid sixpence [illegible] hour A large part of the labour force included French prisoners of war

It is interesting to note the difficult nature of the work involved to secure proper foundations for the heavy structure erected on shifting sands and mud The major part of the foundations were in soft mud and quicksand and the great depth of water and heavy swell to which the works were all times exposed rendered it necessary to adopt what was then a novel form of construction

All the wharf and basin walls were built on wooden docks supported on timber piles the centre of the masonry and brick river walls were made hollow in order to reduce the load on the piles The hollows were filled with chalk or gravel as these materials are less dense than masonry The whole of the river walls were founded in coffer dams over 3 000 feet in length and consisted of rows of 12 in by 12 in timber piles 6 feet apart driven close together and secured with ties and walings The space between the rows were filled to half tide level with puddled clay and after this had settled the remaining spaces were filled with brickwork

Considerable difficulties were experienced with these coffer dam piles due to the ravages of the sea worm Teredo which records say would have destroyed the piles in three or four years unless checked The secret of the method used is not known to this day and considerable trouble is being experienced in the lower reaches of the Medway where timber jetties have to be demolished as unserviceable because of the damage done by this pest to piers built during World War II

The construction of the basin walls was of a similar pattern except that they were not boxed The whole of the bottom of the basin floors were covered with a 6 ft thick bed of puddled clay and the dock walls were similarly backed in order to ensure water tightness of the basins The five masonry dry docks were constructed and supported as well on grids of piles These docks were provided with iron built gates weighing about 70 tons each Four of these gates were later replaced by caissons but the original gates are still used at No 4 dock

One of the earliest of steam propelled vessels was built at this yard the *Salamander* a sloop constructed about 1832 Then followed the paddle wheel steamer *Prometheus* *Vesuvius* and *Styx* The *Rattler* one of the first screw vessels built for the navy was launched in 1843

Last mast ponds and tunnels were constructed in the southern section but with the change over from wooden to iron ships the need for these facilities ceased and were filled in with the excavated materials from the extension of No 4 dock in 1910 Various buildings such as the generating station and the compressor house have now been built on the old mast pond site

A new dockyard church was provided during the reconstruction of the

yard but in 1881 it was destroyed by fire. The church was rebuilt and opened in 1885.

Early in the present century the yard underwent another change. With the completion of the sloops *Cadmus* and *Clio*, one built on the slip, the other in No. 4 dock, the Admiralty decided that no further ships were to be built in the dockyard and that the future policy would be to adapt the yard to the refitting of destroyers and torpedo boats. New machinery was installed in the shops and Nos. 4 and 5 docks were extended to receive destroyers of that period.

During the years of 1905–6 the austerity policy of Sir John Fisher caused the discharge of several hundred workpeople. Many of them returned, however, a few years later when another change in policy took place in the days of the Naval Defence Act, one of hurry for further construction. The cruisers *Charybdis* (4,360 tons) and *Brilliant* (3,600 tons) were built on the building slip, and six torpedo gunboats were built in the docks.

Throughout the first great war the yard was very active and working strength was formidable. After the war a floating dock was brought to Sheerness from Harwich to accommodate the repair of V and W class destroyers which were too long to fit into the docks.

Between the great wars the yard concentrated on submarine and destroyer refits as well as maintenance of vessels employed on fishery patrol duties in the North Sea. New work included the manufacture of torpedo tubes.

At present the important work of refitting submarines, frigates and mine sweepers is being carried out. Modern engineering equipment and skilled craftsmen have combined to carry out the policy makers' plan to the letter, plus that extra polish a good team can produce because Sheerness is a friendly, happy yard.

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TYPHUS FEVER

A Historical Review, with Reference to the Epidemics in Algeria and Naples During the Second World War

BY

Surgeon Commander C. V. HARRIES, R.N.

Introduction

TYPHUS FEVER is a disease of great antiquity. Hippocrates knew it was known to be associated with famine and distress during or following the enforced miseries of war, and at least one writer at the beginning of the seventeenth century surmised that there was a connexion between the presence of human lice and the disease.

Up to about 1850 no precise differentiation was made between Typhus fever, Relapsing Fever and the Enteric Fevers. During the next eighty years Typhus was considered to be a single disease quite separate from other fevers and unique.

It has only been from studies carried out during this century that it has been appreciated that typhus comprises a large world wide group of diseases caused by certain micro organisms called Rickettsiae.

In 1909 Nicolle as a result of experiments in Tunis (Nicolle Comte and Conseil 1909) showed that the human louse was the vector of the organisms described by Ricketts one year later (Ricketts and Wilder 1910).

In 1916 Weil and Felix found that the blood serum of typhus fever patients developed antibodies to certain proteus organisms which were sometimes found in the urine (Weil and Felix 1916). This Weil Felix reaction remained for many years the only serological test available for the diagnosis of typhus. It is still widely used.

In 1926 the International Sanitary Convention for Maritime Control included louse borne typhus as one of the five convention diseases.

The discovery by Cox in 1938 that propagation of the organism could be effected by inoculation of the hen's yolk sac was a great advance. It gave a means of obtaining specific antigens which permitted a precise differentiation between the numerous members of the typhus group by agglutination and complement fixation tests. These yolk sac cultures also provided specific prophylactic vaccines against several of the rickettsial diseases (Cox 1938).

Under the International Sanitary Convention of 1944 the terms typhus, typhus fever and exanthematous typhus are now deemed to relate only to epidemic louse borne typhus, which is the main theme of this dissertation.

Bacteriology

The Rickettsiae have been placed by biologists between bacteria and viruses. They are small often pleomorphic bacterium like organisms which may or may not be pathogenic to man. They are non motile and Gram negative and stain lightly with aniline dyes. They live and multiply in certain cells of arthropods vertebrate hosts and of chick embryos but cultivable in any known cell free medium, usually behaving as obligate intracellular parasites in the cytoplasm of the cell. The difference between the rickettsiae and viruses in tissue culture is that the viruses multiply only while the cells are actively living, whereas rickettsial multiplication goes on and is often maximal at a period when the cells are no longer viable (Pinkerton 1938).

The rickettsial diseases of man are subdivided into

(1) Typhus (a) Human (b) Murine

(2) Spotted Fever (a) Fievre boutonneuse (b) Rickettsialpox [1] (c) All other strains

(3) Tsutsugamushi Disease Varieties not yet established

(4) Trench Fever [2]

(5) Q Fever Australian and American strains probably identical have now been reported in England (Stoker 1949)

Rickettsia prowazeki is the causal organism of typhus *Dermacentroxenus rickettsia* of spotted fever *Rickettsia orientalis* of tsutsugamushi disease *Rickettsia burneti* of Q Fever and *Rickettsia pediculi* the probable cause of trench fever (Pinkerton 1936)

So far 42 micro organisms some of intracellular and a few of extracellular habitat have been described in the tissues of 37 species of arthropods to which the term Rickettsiae has been applied because of their similarity to *R prowazeki* and *R pediculi* (Stemhaus 1946)

Typhus fever was further subdivided into the endemic murine or flea typhus caused by a variant of *R prowazeki* (called by some authorities *R mooseri*) transferred from rat to rat by the rat louse and from rat to man by the rat flea *Xenopsylla cheopis* and the epidemic or louse borne typhus together with its sporadic form Brill's disease caused by *R prowazeki* and transferred from man to man by the human body or head louse

Restricting oneself to human and murine typhus the two types cause almost identical diseases Both have been asserted to be transmittable from one person to another by the human body and head lice Recovery in man from one type protects against the other They can be distinguished only by relatively slight if definite differences of behaviour when injected into rats mice and guinea pigs and by immunological reactions

Infection with *R prowazeki* evokes serological responses in man Specific antibodies can be demonstrated by complement fixation agglutination of the rickettsiae precipitin reactions opsonic tests and neutralization or protection tests There is also the very important serological test call the Weil Felix reaction in which occurs the agglutination of Proteus OX 19 by the sera of 90 per cent of typhus patients (Snyder 1948)

The discovery of Brill's disease over 500 cases occurring in Boston and New York since 1910 and confined to foreign born immigrants appears to confirm the theory that rickettsiae can remain in human reservoirs and result in recrudescences of infection acquired in childhood when the host's resistance is depressed since the cases were so distributed in time and place that louse transmission or contact infection could be excluded Careful investigation showed that no factor common to the entire population—such as rats fleas or any other animal or insect vector—could be held responsible

Theory of the Origin of Parasitism of Certain Rickettsiae —Much speculation has arisen as to the evolution of the parasitic habits of those rickettsiae which have become parasites It is generally thought that they have evolved from free living forms which first were saprophytes in the guts of primitive insects then due to the ready availability of nutrition some species of these organisms lived exclusively in the gut of these insects even to deriving their nutriment from the cells lining the gut thus becoming true parasites After a great passage of time the host began to tolerate the organisms as symbiotes within the cells But the potential pathogenicity of these organisms was never lost and could become active again when brought into contact with other types of cells such as those of new hosts which would occur when the insect host began to live on the blood of vertebrates which the organism was able to parasitize (Burnett 1942)

Theobald Smith was of the opinion that pathological manifestations are only incidents in a developing parasitism (Smith 1934). On this basis rickettsial infection in the ticks is a very ancient condition for in this relationship mutual toleration has been developed to such perfection that neither partner appears to be injured and the organism is transmitted without harm to parent or offspring from one tick generation to the next. In the rat flea the condition though still ages old is probably a more recent one for the flea—after a month or two—rids itself of the organism and recovers. In the case of the human louse however one is led by the same reasoning to assume a relatively late origin of the association since no mutual tolerance has developed and the louse invariably perishes when infected.

By the introduction through a skin lesion of infected faeces from the louse or the sucking of blood by the already infected intermediary host—the lice mites or rat fleas the transmission of the organisms to man follows.

Man appears in the biological sense to be a recent host as in him rickettsial invasion arouses a physiological resentment and the ensuing struggle manifests itself as a disease in which either host or invader succumbs though in either event only those rickettsiae can escape from their human prison into an arthropod host if the latter happen to feed upon the human victim when the organisms are circulating in the blood.

If mortality is a token of late biological invasion then the human louse must be considered to be a still more recent host as it invariably dies when infected. This hypothesis appears to be upheld by Zinsser (1935) who is of the opinion that the "human" is an offshoot of the "murine" type since years of animal passage and selective experiments have failed to produce a reversion of a human rickettsia to a "murine" whereas passage of the latter through man rapidly produces an often obstinate though so far still temporary transformation in the direction of the human type. He conjectures that the murine was the original typhus infection of man which after a sufficient number of man louse man passages has now become stabilized as a slightly altered but permanent and fixed variety.

Is it too improbable to assume that the original rickettsial parasitism which led to typhus fever in man was a rat rat flea infection and that this may have gradually spread into the main hinterland of Europe at first endemic as is murine typhus at present probably sporadic and confined to small separated village communes then becoming epidemic due to increasing infection of the human lice which propagated exceedingly as a result of the widespread European wars which flourished so frequently in the fifteenth century and onwards?

Mode of Transmission from Louse to Man

When lice feed upon a typhus patient during the febrile period of the illness a large proportion of the feeders become infected with *R. prowazeki*. The organisms enter the cell lining of the intestinal tract of the louse where they multiply. The parasitized cells rupture and the organisms may either enter other cells of the gut or be passed in the faeces. This occurs about three

to five days after the first infected meal. The louse succumbs to the infection after seven to ten days.

Apparently the infection is passed to human beings by fecal contamination of the wound made by the louse in feeding or by the man through scratching or accidental trauma, since the organism is not demonstrable in the louse's salivary glands nor has the insect the power to regurgitate the infected meal.

Under experimental conditions, when the humidity and temperature are kept low, rickettsia may survive for many years, so the heavily contaminated clothes of an infected patient can be a nidus of infection for a suitable period under favourable conditions.

Though typhus can be transmitted by the *Pediculus humanus capitis* as well as by *Pediculus humanus corporis*, the latter is by far the more important. The eggs of the body louse are laid in the seam of clothing; a female will lay as many as a dozen eggs a day, with a total of nearly 300 eggs during the normal life span of four to eight weeks. When kept continuously near the body, the various stages in the life cycle are as follows: egg, eight days; larva, two days; first nymph, two days; second nymph, two days; and pre-oviposition period, one day. The total cycle therefore requires sixteen days, but the duration depends on the temperature, and any stage may be considerably prolonged in clothing removed from the warmth of the body. Pairing commences within a few hours of reaching the adult stage.

Lice are sensitive to temperature and will move away from a person with a high temperature or from a cold cadaver. Thus those in attendance on the sick or dead are most apt to encounter and to carry away with them lice infected and as mortality increases with age it is desirable to have young adults as attendants.

Clinical Features of an Attack

In man epidemic louse-borne typhus is usually a severe systemic infection with continued fever lasting about a fortnight, which is accompanied by a characteristic rash.

Following an incubation period of eight to fourteen days illness begins rapidly with shivering, malaise, headache, anorexia and muscular pains. The headache continues whilst the temperature rises progressively during the next few days and there is increasing lethargy.

On or about the fifth day a pink macular rash appears on the abdomen and then of the trunk. This rash may spread but it avoids the face until it is most marked in severe cases the macules become petechial in character and fresh petechiae may appear. The spleen may be enlarged.

During the second week prostration is marked, the patient drowsy, confused or stuporous. A fall in the blood pressure with oliguria indicates severe involvement of the vascular system.

In those who recover the temperature remits about the fourteenth day, the patient becomes calmer and rational and the rash begins to fade. Con-

valescence is quickly established but the patient is extremely weak and emaciated. There is a transient diuresis.

Complications are septic infection, subcutaneous abscesses, parotitis and pneumonia. Autopsy may reveal characteristic vascular lesions of a proliferative and necrotic type in the brain and suprarenals accompanied by a myocarditis.

Typhus often exhibits a much more severe disease in patients over the age of 40 years with a frequent fatal outcome, yet in children it may be so mild that it may be missed.

Historical—up to 1914

Although typhus fever has probably afflicted mankind since ancient times, the first recorded outbreak simulating it occurred in a monastery near Salerno, Italy, in the year 1083, where the inmates were affected with a severe fever accompanied by petechial spots and parotid swellings. This would seem to differentiate the outbreak from pest (Zinsser, 1935).

The earliest recorded severe European epidemic occurred in 1489–90, when the Spaniards were contending with the Moors for the control of Granada. The Spanish soldiers had been hurriedly recalled from Cyprus, an island where the disease was asserted to be endemic. According to Villalba, writing in 1802 and quoted by Zinsser, this new disease—known as the spotted fever—assumed epidemic proportions in 1757 and it raged unchecked for thirteen years, depopulating the greater part of the Iberian Peninsula. Villalba also asserts that the disease was transferred to Mexico by the Spanish merchantmen in the year 1576.

In Chapter VI of the second book of his De Contagione et Contagiosis Morbis et Eorum Curatione, quoted in many modern textbooks, Fracastorius in 1546 gave an excellent description of the clinical appearance of the new disease, which is sufficiently clear to identify typhus fever as a separate entity. According to him, the disease had appeared for the first time in Italy in 1505 and again in 1528, apparently from Cyprus.

From then onwards typhus fever began to play an active part in the politics of Europe, being intimately associated with wars, famine and occupation. In 1528, the much larger and so far victorious French Army under Francis the First was on the point of capturing Naples when typhus broke out, and within thirty days over 18,000 out of 24,000 of the encircling army died. As a result the Emperor Charles the Fifth became triumphant once more and was crowned ruler of the Roman Empire, the Pope had to make overtures to him, and Italy became a dependant of Spain.

Whenever armies fought, typhus became evident. The Balkan epidemics in the sixteenth century contributed greatly to its spread across Europe. Large forces were assembled from various parts of Germany, Italy and France for combat with the Turks, but many more stricken by the disease before they reached the battlefield, and it became known as "Morbus Hungaricus", since it was disseminated throughout Europe by the soldiers returning from Hungary.

Zinsser [illegible] account of typhus fever in the Aztec [illegible] was from [illegible] (Mexico) written by Dominic Bustamante which was the earliest medical publication of the new Continent (Zinsser 1935). The first account of a typhus epidemic is found in the writings of Pedro Cieza de Leon who referred to the severe outbreak in Mexico in 1576 and [illegible] two million Indians died (Sanchis and Maxcy 1925).

Later in his Observationes Cantrenses in 1606 make the first surmise that there must be a connexion between the incidence of typhus and the presence of lice (Zinsser 1935).

Throughout the seventeenth century typhus continued its exploits in Europe affecting civilians and soldiers alike in the continuous military struggles of that period. During the Thirty Years War the Swedish Army under Gustavus Adolphus was forced to withdraw in one campaign in 1632 as typhus aided by scurvy killed 18 000 soldiers.

In the 150 years that passed between the Thirty Years War and the Napoleonic campaigns typhus contributed almost continuously in the chronicles of epidemic diseases deciding the fates of nations and generals. Typhus and the coldness of the winter forced Napoleon to retreat from Moscow decimated his army. France lost the flower of her manhood made possible the Battle of Waterloo in how a French defeat and so liberated Europe freed of French domination.

On the Eastern European battlefields where the struggle between Russia Poland and Austria continued through the nineteenth century typhus became more and more firmly implanted leading to the establishment of foci persisting to this day.

Since the habits and sanitation of the peoples had not greatly improved it has not been easy to account for the reason why typhus did not resume epidemic proportions on the mainland of the European Continent after 1815 until the First Great War unless it was that famine was not rampant and that wars were of relatively short duration.

Historical—in Great Britain

According to MacArthur (1927) typhus fever was first noted in England at the beginning of the sixteenth century. It was most common in the prison hence the alternative name of Jail Fever though it decimated both Parliamentary and Royalist Armies in 1643 and so may have been the deciding factor in the ultimate result of the Civil War.

Creighton (1891) came to the conclusion after he had compared the Tables of Sydenham's Epidemic Constitutions from 1661 to 1685 with the corresponding statistics from the London Bills that typhus fever was perennial not only in the City but throughout the land and that except for the Plague Year 1665 it had a bigger mortality than any other fever.

In 1741 42 over 7 000 died in London out of a population of 700 000. According to Short's Abstracts of Parish Registers in more than half of the registers examined there were more burials than births in that period (Creighton 1891).

The deplorable conditions in the jails remained unchanged until after 1770 when John Howard the first great advocate of prison reform (who himself later died of the disease as a result of his tours of inspection) wrote his pamphlet "The State of the Prisons in England and Wales" which aroused public outcry and parliamentary legislative reform

Next to battle casualties and perhaps scurvy typhus was during the eighteenth century the most dreaded affliction of the Navies so "Ship Disease" was a common designation of the fever

In 1758 Lind physician to the naval hospital at Haslar gave a very clear description of the disease and deduced that the infection was carried not only on the bodies of the victims but also upon their clothes and belongings and was in their resting places onboard He did not consider that ventilation could prevent spread but advocated fumigation of the ships with thorough scouring and cleansing together with the removal of all the bedding and clothing of the persons affected He also recommended that physicians and nurses should change their clothing after visiting patients He asserted that the disease was continually introduced into the Navy directly from the jails through the "pressing" of newly discharged convicts (Lind 1763)

The decrease in the incidence of typhus in the Navy towards the end of the eighteenth century was effected by (1) not taking men from the jails (2) a greater allowance of soap (3) keeping the bilges clean (4) washing down the decks (5) frequent cleansing of the living spaces (Blane 1789)

In his "Observations on Diseases of the Army" Pringle differentiates the disease not merely by the flux but also by the appearance of blotches petechial spots and parotid enlargements

The disease had probably spread to Ireland also in the middle of the sixteenth century and was widely epidemic by the early eighteenth century In 1740 the occasion of the potato famine there was a disastrous mortality and in the great outbreak of 1816 19 it has been estimated that there were over 700 000 cases in a population of six millions From 1831 the population of this country increased from nearly eight million to under five million in 1891 mostly the decrease was due to emigration but typhus aided by relapsing fever contributed greatly to this decline as between 1847 and 1877 it was estimated that over half a million died from these two diseases which were continuously endemic

In 1824–26 there was an epidemic in London of what was thought to be a new type of disease of lung ulceration with abdominal symptoms On autopsies being performed there were revealed ulcerations of the lymph follicles of the ileum and splenculation of the mesenteric lymph glands According to Creighton (1891) the authentic history of enteric fever really starts with these descriptions by the physicians of Leith and St George's hospitals as Pringle and other observant physicians had failed in the previous century to find any intestinal ulcerations in their many post mortems

From 1830 onwards the many observers in London Edinburgh Glasgow and Dublin commented on the displacement of the relatively mild disease (relapsing fever) by the far more lethal spotted fever (typhus fever) with a

mortality [illegible] One author [illegible] of Fever [illegible] in 1847 [illegible] known to track [illegible] and the influx [illegible] [illegible] (Swan 1839)

In the years 1841–50 the three grand fevers then existing in Great Britain namely spotted typhus enteric and relapsing were at last so clearly described distinguished and defined that no one afterwards need be in doubt or confusion (Creighton 1891)

The admissions into the London hospitals of typhus exceeded those of the enteric fevers—except for two short periods—until 1871 the worst year being that of 1847 in England and Scotland and was most prevalent in Liverpool where it was reputed to be due to a spread from Ireland In that year more than 40 000 died from the disease (Creighton 1891)

The last pandemic in Great Britain was during the cotton famine of 1862–64 with a recrudescence in 1869–70 when it was restricted to a few large cities

It was in 1869 that deaths from typhus fever simple continued fever and the enteric fevers were first tabulated separately in the Registrar General's Annual Reports and it was from that year that the mortality from typhus began to fall steadily in a rapidly growing population

Creighton (1891) asserts that the decrease was due to the creation of wide insolential streets and new quarters in the big towns thus destroying the haunts of typhus fever the abolishing of the window tax in 1851 though it took many years for the windows of the older houses to be uncovered the improvement of sewerage and the pulling down of many of the back to back dwellings

Historical 1914–1930

In July 1914 Austria initiated the First World War by entering Serbia whose frightened peasants commenced to move southwards in a great rabble with all their portable possessions

Northern Serbia quickly became devastated and in November of the same year typhus fever began to show itself in the Serbian Army It is probable that it occurred about the same time in the invading Austrian Army

In less than six months there were over 150 000 deaths from the disease Though Serbia was practically helpless Austria did not continue the advance She was frightened to do so because of the typhus and delayed doing so for a further six months What effect this delay had on the final outcome of the war can only be conjectured but it is not unreasonable to believe that a quick thrust through Serbia and the subsequent occupation of Greece and Salonika with the establishment of a south western front against Russia may have resulted in tipping the balance in favour of the Central Powers

Thereafter the disease flourished along the Eastern Front From the conservative calculations of Tarassewitch it is thought that in Russia alone there were 50 million cases with nearly 3 million deaths between 1918 and 1922 (Brouwkes 1926)

Luckily for the combatants typhus fever did not break out on the Western Front in its stead there occurred trench fever another rickettsial infection and also transmitted from man to man by lice

Between World War I and World War II typhus [illegible] from Poland and the Balkans as well as Russia also Manchuria and China in epidemics of varying severity and spread again to during the [illegible] never-ending destitution and famine accompanied war [illegible] Sporadic cases occurred in most of the countries bordering the Mediterranean in South Africa and Central America and the northern republics of South America (Snyder 1948)

There have been a few cases in Great Britain mainly in Ireland and in ports such as Liverpool and Glasgow (Jameson and Parkinson 1942)

The Algerian Epidemic 1941–43

During the initial preparations for the Allied landing at the end of 1942 in North Africa called Torch Expedition there had been received from fleeting reports from Algerian sources as to the presence of typhus fever in that area (Long 1943)

Unfortunately senior British Army Hygiene Officers were not apparently for retention of secrecy admitted into the preliminary discussions on the projected allied landing which therefore to them was an unknown venture both geographically and epidemiologically The Americans were kept informed and having ample supplies of vaccine all their soldiers had been vaccinated against typhus also supplied with M.Y.L. powder containing pyrethrum plus a synergist and antioxidant where the British were issued with A.L.83 containing derris root and naphthalene (Chalke 1946)

Later according to Grenouilleau of the Institute Pasteur Algiers three had been reported in the first ten months of 1942 i.e. prior to the Allied landing about 40 000 cases in Algeria and Morocco with the unnotified cases at least five times as many The epidemic was the worst since 1868 (Grenouilleau 1944)

Quoting the same author it appears that in Algeria typhus has a periodical cycle with maximum number of cases in May–June and minimum in September–October He pointed out that in 1941 and 1942 the conditions there were particularly favourable to an epidemic of typhus There had been a famine besides a lack of supplies especially of soap fuel and clothing which permitted an extraordinary increase of ectoparasites on the natives up to as many as 20 000 lice being counted on one individual

The marked initial increase of cases in each November is attributed in North Africa to the native custom of resuming their winter clothing which is never wholly discarded for the ensuing cold months During 1942 it has been estimated that 700 000 Europeans and 40 000 natives died of the disease in Algeria and Morocco

The marked decrease of notified cases of typhus in 1943 to 20 per cent of those in 1942 was put down to various reasons The French Authorities attributed it to extensive vaccination of the Europeans and natives of whom 4 million were vaccinated with the Blanc-Baltazard vaccine and another ¼ million with the Durand-Giroud vaccine (Grenouilleau 1944) More impersonal observers are of the opinion that it was due in part to the usual post-epidemical decline together with the forceful de-lousing of the natives in

temporary or permanent de lousing stations house to house block dusting farm to farm and institutional de lousing with M YL or A L 63 powder

The great discovery was that de lousing could be effected by means of the Dobbin plunger type of fit gun without the disrobing of persons a very important factor in Moslem countries

Position of the Allied Forces

As stated before the American Forces had been all inoculated against typhus before leaving America The British Forces including the many shore based Naval and R A F personnel had to rely on self-discipline [illegible]lousiness and A L 63 which was self applied or administered by mobile apparatus

Propaganda was intensified The dangers of typhus the risks attendant on close contact with Arabs the propagation by lice were all graphically illustrated by wayside notices by posters and films and in the Service newspaper Unit officers were instructed on how to give lectures to their men

As a consequence though often having to live in close contact with the native population in 1942–43 there were only 36 cases in the British Army with admittedly a fatality rate of 32 per cent compared to 9 mild cases in the American Forces

The decision to utilize Native Labour Companies chiefly in the Port Areas which were under the supervision and control of the Royal Navy made it essential that these personnel should be frequently and stringently powdered with an insecticide and this—despite their protestations—involved the removal of their turbans As an added precaution the recruits were inoculated with a single dose of the living murine vaccine of Blanc Baltazard As far as is known not one of these recruits contracted the disease

THE NAPLES EPIDEMIC 1943–44

On 1st October 1943 when the Allied Forces entered Naples they found approximately a million people about three times the usual population living in a severely bombed city further devastated by the Germans before they withdrew Over 30 000 persons existed in the filthy underground catacombs There was little food or soap insufficient clothing no fuel—it was very cold—and vermination was conspicuous by its absence The gas electricity water and sewage systems were out of action the medical services were not organized the public health department functionless and the general disruption of the civil affairs made it impossible to obtain any accurate epidemiological data [illegible] hospitals and prisons some of which had been damaged by bombing Enormous was the life

No cases of typhus had been officially reported in Italy since 1927 and when the epidemic broke out in the autumn of 1943 in the city of Naples all conditions seemed favourable for a rapid spread and a high mortality in a population without experience of and hence immune against the disease with a disrupted machine to maintain operations

According to Wheeler (1946) typhus was introduced into Italy by Italian

soldiers returning from Russia and North Africa and by Yugo Slav prisoners-of war who were incarcerated in very bad conditions the first case occurring in Bari in March 1943 then 3 cases in Aversa six miles from Naples in the following month In August 1943 cases appeared with high fatality in the Neapolitan prisons and up to November 60 cases had occurred in the Naples area Yet for some unaccountable reason at the first sanitation conference on November 27 between the Allied Hygiene Officers and the Italian civilian public health doctors the latter asserted that the cases earlier in the same month were the first in Naples for many years (Wheeler 1946)

Initial Action Adopted

Immediately it was realized that an epidemic was imminent a committee was established consisting of representatives of the Allied Forces Allied Military Government and Italian Civil and Armed Forces doctors later joined by members from the Rockefeller Foundation Typhus Team and the U S A Typhus Commission

At first the typhus control programme consisted of

(1) A meeting of the city's civilian doctors getting their co-operation accentuating the extreme seriousness of the situation and informing them of the measures that would be taken such as

(2) Case finding and the attempted isolation of the patients

(3) The setting up of de lousing stations at the railway station at ferry embarkation points in the refugee camps and at all exits

(4) Immediate contact de lousing of persons who had been in contact with typhus patients and general contact de lousing of all persons in the vicinity of the cases with either British A L 63 or American M Y L

(5) Mass de lousing of the entire population of the city of Naples

(6) The segregating of all refugees who were all to be de loused

(7) Publicity and education of the population

(8) The training of personnel in typhus control methods

As done previously in North Africa the de lousing was performed without the removal of clothing by the aid of the Dehon dust gun The powder was urged up the sleeves to reach the axilla down the front and back inside the shirt and inside the trousers to reach the pubic region The head of both sexes was also powdered

By the end of December Dichloro Diphenyl Trichloroethane or D D T 10 per cent in talc was available in sufficient quantities for it to replace plain A L 63 to which it was often added and M Y L

By the end of 1943 in preparation for Anzio and other projected operations Naples had temporarily become the busiest port in the world Despite the aforementioned measures the weekly number of cases were steadily increasing so more stringent measures had to be enforced

Further Methods of Control

(a) All cinemas and public places of amusement were closed but schools were kept open as the powdering and supervision of children were the more easily facilitated

(*b*) Road traffic was controlled by barriers where all travellers had to submit to being powdered then issued with a disinfestation chit

(*c*) The city of Naples was placed out of bounds to all Allied Forces other than those on essential duty The latter had to have three injections at weekly intervals of Cox's anti typhus vaccine of which fortunately a sufficiency had arrived from America by that time

(*d*) Visiting naval and mercantile personnel were confined to the Dock Area

(*e*) Civilians employed by the navy and army were dusted every week and those working in close contact with Allied personnel were inoculated with the French vaccine

(*f*) The R.A.M.C. took over an isolation hospital and supervised the Italian hospital arrangements

(*g*) To facilitate earlier admittance into hospital extra vehicles were commandeered to act as ambulances To make hospitalization less unattractive extra supplies of meat and bread were obtained from Allied sources

Course of the Naples Epidemic

By the end of the first week of January cases had increased to 65 a day Then the measures which had been adopted suddenly showed their effect The second week of January revealed a fall from 350 to half that number This decrease steadily continued though cases outside the city showed a contrary increase until the end of March when they also declined in numbers so that by June the epidemic was virtually over

The table below showing the course of the epidemic has been abstracted from a paper on 'The Rickettsial Diseases of Man' by S Bayne-Jones at the Boston Meeting on 26th 28th December 1945 of The American Association for the Advancement of Science

TYPHUS IN NAPLES AND VICINITY 1943-44

Year	Month	*Cases in Naples*	*Cases in vicinity of Naples*
1944	March	0	1 (Sarl)
	April	0	3 (Aversa)
	May	0	0
	June	0	0
	July	2	0
	August	11	0
	September	18	0
	October	29	0
	November	61	10
	December	87†	40
1944	January	793	134
	February	†57	123
	March	28	129
	April	7	35
	May	0	†7
	Total	†407	492

The case fatality was about 22 per cent of whom most were old people After the age of 50 the mortality rose to nearly 50 per cent There was one case in the British Army and he recovered (Chalke 1946)

Though typhus [illegible] from 1903 onwards continued [illegible] from the Balkans [illegible] cases in any of the [illegible] but in the metropolis [illegible] with which medical attendants [illegible] with these patients.

Conclusions to be Drawn from the Naples Epidemic

These have been summarized from the articles published by Challe (1944) and by Byrne-Jones (1948) which are my views as well as Simon Naval Medical Officer in Algiers (1942–43) and in Naples (1943–45).

They are that typhus fever can now be controlled and terminated in an overcrowded and heavily louse-infested city under the most adverse wartime conditions during cold winter months by the following measures:

(1) Intensive searching for cases and the isolation of same mainly in hospitals as much to prevent dissemination by the fumigation of the infected clothes of the patients as to render correct treatment.

(2) Immediate disinfestation with D.D.T. powdering of all persons who have been in contact with or in the near vicinity of cases.

(3) Mass disinfestation of the populace to be as thorough as is possible. In Naples over 3 million people were dusted by D.D.T. 4.L.63 or M.Y.L. Dwellings, working places and buildings where the people tend to congregate should also be dusted or sprayed.

(4) An army can live in a typhus-ridden area with almost complete immunity as long as discipline is maintained and prophylactic dusting is properly and frequently carried out. Henceforth anti-typhus vaccine inoculation before entering the area will be an added protection though it did not play much part in this epidemic.

Outbreaks Elsewhere in the World Since 1939

In Germany wartime typhus first appeared in 1939 presumably from Polish or Russian sources. The incidence later increased to such an extent that official publications were stopped after the end of 1943.

But it is known that in the first five months of 1945 over 18 000 new cases were notified. It was not common in the prisoners of war camps but was widespread in the concentration camps, though the numbers have not yet been officially published.

In Korea the disease has always been endemic and it spread to Japan by the agency of the repatriated Japanese. In the period 1946–48 over 30 000 cases were reported in Japan, but only 28 in the personnel of the Occupation Forces who followed the precepts learnt from the Naples epidemic. The outbreak among the civilians was again controlled by the use of D.D.T. powdering. Treatment of patients was by one of the newer antibiotics Aureomycin or Chloromycetin and was found to be very efficient.

Summary

For over four centuries classical louse-borne typhus fever has occurred wherever countries have suffered from overcrowding and famine due usually to war or occupation by enemy troops. In the past its presence often decided the fates of armies and countries.

But the experience in North Africa and Naples followed by that in

[illegible] in Japan has showed that a mass epidemic even in the worst [illegible] can be curtailed and controlled by the use of insecticides and [illegible] hygiene.

If [illegible] must have to enter louse infested areas prophylactic injection of [illegible] from Cox's yolk sac cultures will prevent or mitigate the [illegible] infection and if the disease is contracted the newer antibiotics [illegible] chloromycetin are effective therapeutically.

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*THE BIOLOGICAL EFFECTS OF IONIZING RADIATION

BY

O A TROWELL, M A M D F R S Ed

THE biological effects of radiation must all be ascribed to the damage inflicted on living cells by the radiation which passes through them In some cases cell damage is obvious on microscopic examination but in others it can only be inferred from some change in cell behaviour Very little is known about exactly how and why radiation damages cells only the end effects can be observed and in many cases it is not even known which part of the cell is primarily affected

The different sorts of ionizing radiation—α rays β rays X rays neutrons—all produce qualitatively the same effects on living cells but they differ in the extent to which they can penetrate the body tissues and in the amount of damage which they do after penetration Some of which annul the anatomical distribution of cell lesions will depend very much on the nature and sort of the radiation but the nature of the lesions produced is always the same whatever the type of radiation

2—CELL DIVISION

The most striking effects of radiation are on the process of cell division (mitosis) and on the chromosomes Before proceeding further the reader should if necessary refresh his memory of (*a*) the mitotic cycle and (*b*) the elements of heredity and genetics In what follows this basic knowledge will be assumed but we shall digress for a moment to emphasize the following important points The *chromosomes* which are conspicuous during mitosis and which can under ordinary visible there are in fact present in the nucleus at all times Thus is still present though difficult to see in the non dividing cell The hereditary material which is handed on from cell to cell and in the case of the germ cells from individual to individual is all contained in the chromosomes During cell division each chromosome splits longitudinally into two exactly similar halves one of which goes to each daughter nucleus so that the genetic material is exactly reduplicated in the new cells Each single hereditary factor which is handed on from parent cell to daughter cells and in the case of the sex cells from parent to offspring is called a *gene* Each gene must have some material basis and it must form part of the structure of a chromosome but as yet we do not know what they are made of no one has ever seen a gene So gene is at present a somewhat abstract term for a chromosomal structural element whose existence is inferred but not yet physically or chemically defined Since there are many hundred genes in any one chromosome they must be exceedingly

* A lecture delivered at the R N Medical School Alverstone 21st October 1952

small and since chromosomes are composed mainly of nucleoproteins we may guess that each gene is probably a single molecule of nucleoprotein. This genetic material of the cell—the chromosomes and their constituent genes—is particularly susceptible to damage by radiation. Part of it may be destroyed by the radiation or it may undergo some rearrangement in pattern during the process of repair so that the genetic material handed on to the next generation is abnormal in one way or another. When this happens the new cells or new individuals are likely to be abnormal in shape, size or function owing to the alteration in their genetic constitution. Such abnormal cells or individuals are called *mutants*. *Mutation* therefore is a common result of radiation damage, but it can be produced by other means, notably by various chemical poisons. Sometimes the mutant is so grossly abnormal that it cannot survive and in these cases we speak of a *lethal mutation*. With this preamble we may now proceed to a brief account of the biological effects of radiation.

1.—List of Biological Effects

In the list the various causes of cell death after irradiation will be numbered D1, D2, etc., and the causes of mutation M1, M2, etc.

(1) *Inhibition of Mitosis*

The process of mitosis is inhibited by quite small doses of radiation, but the inhibition is only temporary, persisting for only a few hours or days after a single dose of radiation, and recovery is complete even after fairly large doses. All proliferating tissues are susceptible; there is not much difference in sensitivity between different cell types of different species of animal. Radiation causes not a uniform slowing down of the whole process, but a block or hold-up at one specific stage—*early prophase*. Cells in prophase or about to enter prophase are arrested and as it were frozen, but cells which had already passed prophase at the time of irradiation are not affected; they complete their divisions normally. The number of mitoses present in a proliferating tissue is thus temporarily reduced (except for arrested prophases), but eventually recovery occurs, the frozen cells complete their mitoses normally and new mitoses start. This mitotic inhibition is not associated with any visible damage to the cells nor does it *per se* lead to cell death. It is probably caused by the temporary inhibition of some metabolic process associated with nucleic acid synthesis. It is true that some of these arrested cells do die later during or just after the completion of their mitosis, but their death is due to a different cause which will be explained later.

(2) *Chromosome Damage*

We must first make four important general statements about radiation induced chromosome damage before passing on to details.

(i) The chromosomes are not damaged during mitosis when they are most conspicuous; they are only damaged in the inter-mitotic resting period. Attention has already been drawn to the fact that the chromosomes are present as such in the non-dividing nucleus and it is at this stage that they are susceptible

[illegible] Damage to chromosomes does not result in immediate [illegible] of division. Even if sufficient of its chromosomes are damaged [illegible] it exhibits no change in appearance, function or behaviour until the next cell division. This is to be expected, if as we believe the chromosomes are responsible for building the cell machinery in which new cell but are not thereafter concerned in its control or maintenance.

(iii) The chromosome damage becomes manifest at the next cell division. Now the chromosomes being more clearly visible damage to them may be seen under the microscope—often they are broken into several fragments. This breaking up of the chromosomes may cause mechanical difficulties during mitosis as a result of which the cell may die or if it succeeds in dividing the daughter cells will be genetically abnormal.

(iv) Chromosome damage is only known to occur in the proliferating tissues of the body (haemopoietic tissues, epidermis, gonads), for only in them does mitosis occur to reveal it. In the case of the non-proliferating tissues which make up the bulk of the body we do not know if the chromosomes are damaged or not. If they were damaged we should not on general grounds expect any disturbance of cell-function, but one cannot be entirely sure about this and it remains one of the unsolved problems of radiobiology.

Two distinct kinds of radiation damage to chromosomes are recognized—Chromosome Fragmentation and Gene Mutation.

(2a) Chromosome Fragmentation

Here one or often several of the chromosomes are broken across transversely into separate fragments. The fragments can be clearly seen under the microscope during mitosis, though they are of course produced at an earlier stage. Fragmentation itself does no harm; the biological sequelæ depend on what happens to the fragments later on, and here there are three possibilities.

(i) The broken ends may rejoin so that the original chromosome is reformed and there is no further trouble.

(ii) When two or more chromosomes in the same nucleus are broken, the fragments may rejoin but on to the wrong chromosomes. Thus if one chromosome is broken into fragments A and a and another into B and b, the fragments might rejoin to give two abnormal chromosomes, Ab and Ba. The result is a muddling up of the genetic material which may lead to mutation.

(iii) The fragments do not rejoin but remain. During mitosis each chromosome is attached by a sort of thread to the pole of a daughter nucleus, and by contraction of this thread it is drawn away from the metaphase plate into the new daughter nucleus. Now this thread is attached to only one point on the chromosome, so that if the chromosome is fragmented only one of the fragments can have a thread attachment. The other fragments will therefore be left stranded when the daughter nuclei are formed. A certain amount of genetic material will therefore be missing from the daughter cells and they are likely to be mutants.

The final biological outcome of all this may be summarized as follows Sometimes apparently from the mechanical difficulties caused by a lot of unattached chromosome fragments the cell is unable to complete mitosis and it dies in the attempt—D1 As the result of a loss of genetic material (as above) or a muddling up of the genetic material (as above) the daughter cells exhibit a chromosome mutation —M1 Very often the mutation is so great that it is incompatible with life (a lethal mutation) and the daughter cells thus soon after they are formed—D2

(3) *Gene Mutation*

Here the damage to the chromosome is much less severe there is in fact no microscopically visible damage at all The phenomenon is simply that one of the daughter cells or individuals formed from cell division occurring subsequent to irradiation shows mutation in respect of one single hereditary factor and from this it is inferred that one of the genes in the parent was damaged by radiation Since a gene is only about as big as a single large molecule e g of nucleic acid it is probable that the damage in this case is at the molecular level part of the molecule being destroyed or knocked off by direct ionization These gene mutations—M2—are not usually lethal to the daughter cells but they may be and this gives another cause of cell death—D3

(3) *Innate Cell Death*

There are a few specific cell types in the mammal notably the small lymphocytes and the spermatogonia which are highly sensitive to radiation These cells die within a few (one to six) hours of exposure to small doses of radiation without the intervention of mitosis It is not known why these cells are so radiosensitive or how radiation kills them but since they never or rarely divide it is clear that the cause of death is not chromosomic damage as in D1 D2 D3 and it must therefore be put in separate but unknown category—D4

(4) *Effects on Cell Metabolism*

Research in this apparently promising field has been singularly unrewarding Intensive search has been made for some metabolic reaction or enzyme system which is specifically deranged by small doses of radiation in the hope of finding some common key to the multifarious biological end effects The only findings so far are as follows

(a) *Nucleic Acid Synthesis* This is definitely inhibited by quite small doses of radiation but the effect is very short lived and quickly recovered from

(b) *SH Enzymes*—There are a number of intracellular enzymes mainly concerned with carbohydrate metabolism which contain a sulphydryl (SH) group as an essential part of the molecule If the SH group is destroyed enzyme activity is lost It has been shown that these SH enzymes isolated from tissues and studied in a test tube are particularly sensitive to radiation radiation destroying the SH groups by oxidation Thus led to a popular theory that the biological effects of radiation were all due to the destruction of SH groups in the cells Unfortunately it has not been possible to demonstrate any reduction

in the SH content of irradiated tissues nor is carbohydrate metabolism specifically upset by radiation

(5) *Malignant Change*

Long or repeated exposure to small doses of radiation not uncommonly leads to the development of malignant tumours and leukaemia in both man and animals. This may simply be a result of non specific chronic irritation. The old theory that malignant tumours arise as a consequence of a gene mutation occurring in a somatic cell is still open for consideration however so it is possible that we are dealing here with a radiation—induced gene mutation.

These different effects will of course usually occur superimposed on one and the same cell. Cells suffering chromosome fragmentation for example will also suffer mitotic inhibition so that their death from mechanisms D1 and D2 may be considerably delayed—in fact the appearances often suggest that the cells die as a result of this earlier mitotic inhibition but such is not the case. Again in rapidly proliferating tissues such as bone marrow it is usually assumed that the cells all die by mechanisms D1, D2 and D3 but it is likely that many of them also die by mechanism D4.

4.—Mechanism of Action of Radiation

We now turn to the more difficult task of trying to explain how radiation produces these effects. The only effect which these radiations have on matter in general is to ionize some of the constituent atoms or molecules. The way in which radiation causes ionization is a matter of physics which cannot be dealt with here. We start from the certain fact that all the biological effects must in some way result from ionization of some of the molecules of the cell substance. There are two ways in which this ionization might be detrimental to the cell. Firstly some cell component such as a cell membrane or a chromosome could be physically disrupted by the direct ionization of its component molecules. Secondly ionization might make certain molecules chemically reactive so that they poison the cell by chemical action.

The problem is to find out in just which part of the cell machinery and in which particular chemical constituent does this primary ionization occur. The answer to this is that we do not know. This is the great unsolved problem of radiology upon which much research has been and still is concentrated. Until it is solved any attempts to protect the human body from the effects of radiation or to improve the treatment of cancer by radiotherapy must remain largely empirical. It may be of interest however to mention some of the difficulties and current lines of thought on this central topic.

The first difficulty is that calculation from physical data shows that the number of molecules ionized must be fantastically small. Thus a dose of 5001 of X rays which is sufficient to kill many cells can only ionize about one in ten million of the cell molecules and over 99 per cent of these are water molecules. This difficulty could be overcome in either of two ways. The first is to suppose that there are in the cell certain vital spots so vulnerable that ionization of a single one of their constituent molecules is sufficient to cause a

biological effect. The second is to suppose that a series of chemical reactions intervenes between the primary ionization and the final biological change, and that these reactions afford scope for some sort of amplification process, which is an autocatalytic or chain reaction. These two alternative hypotheses might have given rise to two rival theories about the biological action of radiation known as the Direct Action and Indirect Action theories respectively, and these we may now examine in more detail.

(1) *Direct Action Theory* also known as the *Target Theory*. This postulates that the biological effect is due to the direct destruction by ionization of some specially sensitive region or vital target within the cell. This theory has certain important implications. Firstly, since the damage is entirely inflicted by a physical process (ionization) without any chemical reactions, we should expect to find that the degree of damage produced by a given dose of radiation was independent of temperature. Secondly, there is no possibility of any recovery from a physical destruction of this sort, so the effects of repeated small doses of radiation should be strictly cumulative and the final effect of a given total dose of radiation should be the same whether it is given over a period of minutes, hours or years. Also, since no recovery is possible, there should be no threshold dose, even the most minute dose should have some effect.

(2) *Indirect Action Theory*.—Since over 99 per cent. of the molecules in a cell are water molecules, there will be far more ionized water molecules produced than anything else. So from a quantitative point of view it is a distinct help to suppose that ionization of water is the primary event of importance. In its current form this theory supposes that the ionized water molecules decompose and also react with dissolved oxygen, leading to various end products among which are OH radicals and H_2O_2. Both OH and H_2O_2 are strong oxidizing agents and it is postulated that they destroy or inactivate some biological component (such as SH enzyme) by oxidation. It is possible that nitrous peroxides are formed as well as H_2O_2, and as these are known to be capable of self-multiplication by chain reactions, this could provide the amplification factor mentioned previously. This theory also has its implications and they contrast with those of the direct action theory. Firstly, chemical reactions are involved, so the biological effect should increase with rise in temperature. Secondly, the OH and H_2O_2 decompose rapidly and spontaneously to that a good deal of recovery from the primary effect occurs. Since this recovery is going on all the time, we should expect to find that a given total dose of radiation produces much more biological effect if it is given over a shorter period of time, i.e. at a high intensity, and that repeated doses do not produce a cumulative effect. Also with very small doses recovery may keep pace with the primary ionization so that no biological effect ensues, and there will therefore be a threshold dose which must be attained before any effect occurs. Further, it should be possible to reduce the biological effect by reducing the concentration of oxygen in the cell or by introducing reducing substances such as cysteine, ascorbic acid or sodium hydrosulphite which would react with and neutralize the OH and H_2O_2.

Obviously it should be possible to decide which theory is correct by measuring some biological end-result such as cell death or chromosome [illegible] and seeing if the effect of a standard dose of radiation [illegible] during culture dose rate oxygen concentration and so on. The results of such experiments have shown that some biological effects are apparently [illegible] and others to "indirect action" — so in a sense both theories are correct referring back to our list of biological effects gene mutation (3. 2b) is the only case for which direct action has been clearly proved. If malignant change (3, 5) is due to gene mutation it too must be included here. In some cases it has been possible from experimental data to calculate the approximate size of the "target" and it turns out to be about the size of a molecule of nucleoprotein and as already mentioned the gene itself is probably such a single molecule. All the other biological effects are apparently due to indirect action indeed apart from the gene it is difficult to think of any other cellular component so vulnerable that destruction of one or a few molecules would be expected to lead to an observable effect. There is however still some argument about chromosome fragmentation (3. 2a) for here the highly localized nature of the visible damage suggests that the chromosome is a "target" which is directly hit. But the effect is dependent on oxygen and so some sort of compromise theory has to be invoked which supposes that the OH and H_2O_2 are produced locally in high concentration in the region which the break occurs. The break is therefore thought to be produced by local chemical action (oxidation) and not by direct ionization of the chromosome material. In the case of mitotic inhibition (3. 1) and acute cell death (3. 3) the action is certainly indirect and it is likely that some enzyme is oxidized and inactivated by OH and H_2O_2 possibly an SH enzyme (3. 4(ii)) probably some enzyme concerned with phosphorylation and nucleic acid synthesis (3. 4(i)). This is however only a working hypothesis which future discoveries may entirely disprove.

5.—Radiation Effects in Human Tissues

The foregoing survey has broadly covered all the biological effects known to occur in living organisms. We shall now consider in more detail the pathological changes found in man and the higher mammals after exposure to radiation and relate them to this general scheme.

Cell division is diminished or stopped in all proliferating tissues such as the epidermis intestinal epithelium bone marrow lymph nodes testis and ovary. This mitotic inhibition only lasts a short while and recovery is complete it is of no immediate or lasting consequence and will not be further considered. The two important findings are (*a*) cell death and (*b*) mutations in germ cells. The former concerns the well being of the individual the latter that of the race and it is best to deal with them separately.

(1) *Cell Death*

It is remarkable that a dose of radiation (whole body) sufficient to kill an animal or man only damages a few selected tissues. These tissues and the particular cells involved are as follows in order of decreasing radiosensitivity

Lymphoid tissue	Large medium and small lymphocytes
Testis	Spermatogonia spermatocytes
Bone marrow	Myeloblasts myelocytes erythroblasts
Intestinal mucosa	Basal cells of glands
Ovary	Developing follicles
Skin	Basal cells of epidermis

The other cells of the body can of course be killed by very large doses of radiation but the doses required are outside the range of normal interest except in connexion with local radiotherapy for cancer and will not concern us here. In the radiosensitive tissues listed above cells begin to die a few hours after an exposure to radiation and continue to do so for two or three days. The affected cells show no specific histological changes they simply die and follow the ordinary pattern of cell necrosis with pyknosis and karyorrhexis of the nuclei and the debris is eventually removed by macrophages. The most primitive cells are usually less affected than the more mature ones and some primitive cells usually survive so that the tissue regenerates and returns to normal within a few weeks. The loss of developing blood cells leads to temporary anæmia and leucopenia loss of developing spermatozoa and ova to sterility and loss of epidermal and intestinal epithelium to ulceration. The small lymphocytes and the spermatogonia are killed rapidly by some unknown mechanism which we have called D4. The remaining cells on the list are cells which normally divide fairly frequently and it is usually believed that they die as a result of chromosome damage by mechanisms D1 and D2 and possibly D3. It is the writer's personal view however that many of these cells die before the next cell division and that they die by mechanism D4.

It is not known why these particular cells should be so much more radiosensitive than the other cells of the body. They have no other common feature in common. It has been suggested that primitive undifferentiated dividing cells are more sensitive than others but this is not strictly true. The small lymphocytes which are the most radiosensitive of all never divide and they are also the most differentiated of the lymphocyte series. Again in the human adult testis the most primitive cells of all the primitive reticulum or stem cells are relatively resistant.

Finally we must remark that the death of these cells is quite insufficient *per se* to account for the death of the animal or man—which usually occurs only two or three weeks after a dose of radiation such as we have been considering. Death of the individual must be due to some additional factor such as secondary infection or haemorrhage or more probably some systemic disturbance so far unidentified.

( ) *Mutation*

The sex cells (spermatozoa and ova and their precursors in the testis and ovary) must be considered separately from the somatic cells (the other cells of the body). Dealing first with the somatic cells since mutation only becomes

manifest after cell division only proliferating tissue will be affected. Some of the mutations will be lethal (mostly M1) and a cause of cell death (D2). Any non lethal ones (mostly M2) will probably be of no consequence for there is a continual turnover and replacement of cells in these proliferating tissues so any abnormal mutant cells will eventually die off and be replaced by normal ones. There may be one exception to this—it is possible that cancer and leukaemia are due to a gene mutation occurring in a somatic cell and in this case the mutant cells which are characterized by a capacity for unlimited growth and division persist and cause the disease.

In the case of the sex cells the non lethal (M2) mutations are of the greatest importance for the mutations may become manifest in the offspring in the shape of congenital defects and abnormalities and in the more severe cases the foetus will die *in utero*. The mutant genes produced in the sex cells by radiation are usually recessive which means that the offspring will only be abnormal if both father and mother carry the mutant gene. This considerably complicates the situation for it means that the mutation will in most cases not appear in visible form until several generations later. Unfortunately as already explained in this business of gene mutation the effects of radiation are strictly cumulative. For instance exposure to 1 r per week for five years would produce the same amount of mutation as 260 r received at one sitting. In this respect therefore all accidental and premeditated exposures (such as those incurred in diagnostic radiography) sustained during an individual's lifetime however trivial add up to make his total score. Figure would therefore seem to be a consolidated risk that exposure of large sections of the population to quite small doses of radiation may lead to the appearance of deleterious mutations in the human race many years later. This is perhaps the most important point to be considered in deciding on the maximal permissible exposure for persons working with radiation and in the long run it is probably the greatest hazard of atomic warfare. It must be remembered however that so far all our information about gene mutation comes from animal experiments. Radiation has only been let loose on evolution and it will be many years before any reliable human data are forthcoming. In the meantime the risk cannot be properly assessed and must remain the subject of considerable anxiety.

ANÆSTHETIC PROGRESS

BY

Surgeon Commander F. W. C. CHIPPINDALE, R.N.

THE ideal anæsthetic agent or combination of agents has yet to be found—but much progress towards this ideal has been made during the past twenty years.

Until twenty years ago ether and chloroform were the commonest anæsthetic agents and administration was usually by the drop and bottle method.

Chloroform apart from the occasional sudden death during induction from vagal inhibition or ventricular fibrillation has also a very toxic action on the liver and delayed chloroform poisoning—a form of liver atrophy—was all too common following its use Ether in the dosage necessary to produce muscular relaxation has undesirable side effects It produces a marked glycosuria and ketosis and its action on the kidneys gives rise to albuminuria Prolonged vomiting commonly followed this deep anæsthesia—partly due to ether dissolved in the mucus in the stomach and partly due to ketosis The patient remained unconscious for many hours after the conclusion of the operation and this tended to post operative chest complications Also in this age of the diathermy ether has become unpopular with the surgeon because of explosive hazard

Spinals and locals were available twenty years ago but were usually given by the surgeon himself These have their disadvantages as mentioned later

Magill and Rowbotham at the end of World War I introduced laryngeal intubation by means of rubber tubes to facilitate the anæsthetizing of cases of facial injury for plastic surgery This was a great advance

The ideal anæsthetic technique should combine minimal toxicity of the agents used with a short induction period and a rapid recovery The agents should be non inflammable and should not cause troublesome oozing in the wound Abdominal relaxation should be obtained with the patient in a light plane of anæsthesia Post-operative complications such as vomiting and thrombosis should be rare Such an ideal technique has not yet been devised—but much progress towards it has been made since the eclipse of the drug and bottle

The introduction in 1929 of avertin provided a means of basal narcosis for the nervous patient For example a patient with thyrotoxicosis would be given a rectal injection of a solution of avertin whilst still in bed and could then be taken to the theatre in an unconscious state thus avoiding all the upsetting sights and smells of the environs of the theatre and also the actual induction of anæsthesia which are so disturbing for these patients

Evipan was first used in this country in 1932 and pentothal in 1934 these drugs were a great advance Like all barbiturates they are narcotics and only have a weak anæsthetic action even in doses which dangerously depress the whole central nervous system especially the respiratory and cardiovascular centres They are used as a total anæsthetic for minor operative procedures but their main use is for the induction of anæsthesia Pentothal is the commonly used drug for this purpose nowadays and has removed much of the fear and apprehension from the ordeal of undergoing an anæsthetic

In the late 1920s some American anæsthetists were working on a theory that if a patient anæsthetized by a gaseous or volatile agent was connected to a closed circuit apparatus in which CO_2 was absorbed basal oxygen needs added and a small amount of anæsthetic agent added to compensate for any leakage, the patient would become stabilized in the plane of anæsthesia in which he was when the closed circuit was introduced At the same time heat and water vapour would be conserved the loss of which from the respiratory during the course of a long operation aided the onset of shock In 1930 a satisfactory closed

current apparatus was introduced and was at first used with ether and later with cyclopropane which was introduced in 1934.

This gas was found to give a smooth tranquil anæsthesia with quick induction and a very rapid recovery. However it was later found to have certain disadvantages. It is very explosive and causes marked capillary oozing. It gives rise to cardiac irregularities and has also precipitated ventricular fibrillation. Respiratory depression is a marked feature of its administration and it is usually impossible to obtain adequate muscular relaxation before the stage of respiratory paralysis has been reached. After operations of a long duration the patient often collapsed on withdrawal of the anæsthetic and a condition called cyclopropane shock developed.

One of the drawbacks of spinal anæsthesia in the earlier days was the short duration of action of the analgesics used e.g. procaine half to three-quarters hour. The introduction of nupercaine and later of xylocaine has increased this period to three to four hours long enough for the majority of abdominal operations. Spinal anæsthesia has the advantage of producing ideal muscular relaxation and owing to the fall in blood pressure very little bleeding at the operative site. However it has many disadvantages unless meticulous care in asepsis is taken sepsis may be introduced into the theca with disastrous results. Neurological complications occur due to injury to the cord or spinal roots by the needle and sometimes from no obvious cause.

Extradural blocks in which the anæsthetic solution is introduced into the epidural space or into the sacral canal outside the dura are said to have the advantage that asepsis will not be introduced into the theca. They are however time consuming and even the expert at times has difficulty in introducing the tip of the needle into the very narrow epidural space or sacral canal. Needles have been broken off in the sacral canal. Puncture of the dura with the introduction of large quantities of anæsthetic solution into the subarachnoid space has on more than one occasion proved disastrous.

Local analgesia for abdominal surgery for the patient who does not want to be put to sleep and the patient with continuous vomiting from intestinal obstruction in whom general anæsthesia can be very dangerous owing to the possibility of inhaling vomit during induction was at one time used a great deal. To obtain ideal analgesia and relaxation for abdominal surgery it is necessary to carry out paravertebral and splanchnic blocks. These necessitate some skill on the part of the anæsthetist as there are dangers of puncture of pleura theca and injection into blood vessels during the paravertebral blocks. There will also be considerable falls of blood pressure due to the involvement of the sympathetic in paravertebral and splanchnic blocks. Other dangers are idiosyncrasy to the agent used and too great a strength of adrenaline added to the analgesic solution.

Trilene first used in 1940 has proved a very useful agent for orthopædic operations not requiring muscular relaxation. It is non-inflammable, but has the disadvantage of a prolonged recovery period. Tachypnœa and cardiac irregularities often occur during its administration and it cannot be used in a

[illegible] cyclopropane [illegible] acetylene

[illegible] the greatest modern advance in anaesthesia was the introduction of [illegible] by Griffith of Montreal in 1943. A purified extract of curare dextro tubo[illegible] chloride, short name tubarine, produced relaxation of striped muscle throughout the body by means of a blocking action at the neuro muscular junctions. Previously, unless a spinal anaesthetic was given, anaesthesia by means of ether and cyclopropane had to be pushed to the stage of respiratory paralysis before relaxation was adequate for most abdominal operations. The patient thus received undesirably large doses of toxic drugs. By using curare to produce the muscular relaxation a light plane of anaesthesia only is necessary and the patient receives a minimal dose of toxic agents, a great step towards our ideal anaesthetic technique. Curare is antagonized by prostigmine, thus any residual paralysis at the end of the operation can be relieved.

During the past few years synthetic relaxant drugs have been produced, helping to make us independent of the South American witch doctors for our supplies of relaxants. Gallamine triethiodide (flaxedil) and decamethonium iodide (C 10, Eulissin) each have a shorter duration of action than tubarine and have disadvantages; flaxedil causes tachycardia and there is no satisfactory antidote to C 10. A new synthetic relaxant, Laudolissin, which has a slightly longer period of action than tubarine and which is antagonized by prostigmine, is on trial at present. Succinyl choline (scoline) is a very brief acting synthetic relaxant and has a duration of action of only three to four minutes. This has proved very useful for laryngeal intubation, bronchoscopy and for softening convulsions in electro convulsive therapy, where only a brief period of relaxation is required.

Two recent introductions into anaesthesia have been procaine and Pethidine. Procaine is used in a drip (1 in 400) to produce analgesia during surgical operations, and pethidine is used by intermittent intravenous injections of 25–50 mg for the same purpose. Light narcosis is provided by a small dose of pentothal for induction and nitrous oxide oxygen in the closed circuit, using 25–30 per cent oxygen. A procaine drip can be difficult to control as individuals vary greatly in their liability to convulsions from an overdose. Constant attention is necessary and at the first sign of a convulsion the drip must be stopped and pentothal injected. Individuals also vary in the amount of analgesia achieved, and the convulsive dose and the analgesic dose may run a close parallel. Pethidine may cause respiratory depression in some patients but rarely sufficient to cause any marked anoxia, and this passes off rapidly on return to consciousness, which is usually within a minute or two of the facepiece being removed at the end of the operation. We now have the antidote to the respiratory depression of pethidine, lethidrone, which removes the depression without affecting the analgesia.

During the past year or so attention has been focused on the production of a bloodless field at the site of operation. The basis of this technique is the lowering of the patient's blood pressure and this can be carried out by several methods.

(1) By deep general anæsthesia e g by means of chloroform or with ether if pushed to the level of respiratory cessation

(2) Total spinal block by using ½ per cent procaine solution a sympathetic block can be produced without affecting the respiratory motor nerves or the respiratory centre Anæsthesia for the operation is supplied by one of the usual methods

(3) Bleeding—Blood is removed from a radial artery stored in heparin and reinfused into the other radial artery if the blood pressure falls too low or at the end of the operation

(4) Posture and ganglionic blocking agents If an unanesthetized patient is placed in the reversed Trendelenburg position there is a variable fall in blood pressure greater in some individuals than in others The quaternary compounds pentaquethonium iodide and hexa methonium (C5 and C6) block both the parasympathetic and sympathetic ganglia This causes a generalized vasodilatation and a dilatation of the veins of the extremities With the patient in the reversed Trendelenburg position the administration of a suitable dose of C5 and C6 intravenously will cause the veins of the leg to act as a reservoir for the circulation and quite a considerable fall in blood pressure results It is usual to attempt to keep the systolic pressure down to 60 65 mm Hg If the pressure falls below this and at the end of the operation the table is levelled out the pressure gradually rises This is the commonest technique used at present to obtain a bloodless field in surgery It has been used on patients from early childhood to over 80 years of age Contra indications are patients with vascular diseases and deaths in the early post operative period have occurred due to coronary and cerebral thrombosis

The anæsthetist is nowadays responsible for the treatment of shock and hæmorrhage during the course of surgical operations It is usual to put up a saline drip after or just before the induction of anæsthesia in cases where operative shock or much blood loss may be expected this can be changed to blood when necessary However occasionally unexpected shock or hæmorrhage may occur when no blood is available We now possess a purely vaso constrictor drug—l nor adrenaline which can be given in a drip and will tide over the interval until a blood transfusion can be started It is rapidly destroyed by enzymes in the body

It is more or less recognized now that the ideal anæsthesia for abdominal surgery should consist of the triad narcosis analgesia and relaxation An example of this would be the following technique

(1) Inductions of anæsthesia with a small dose of pentothal 1 g 0 2–0 7 gramme in 5 per cent solution

(2) Nitrous oxide and oxygen—30 per cent oxygen in a closed circuit

(3) Intermittent intravenous pethidine using an initial dose of 25 50 mg and repeating 25 mg as necessary

(4) Tubarine for relaxation an initial dose of 15–20 mg Repeat doses of 5–10 mg as necessary

[illegible] prostigmine [illegible] intravenously to counteract any residual tubarine effect Flaxedil [illegible] thonium iodide may be used instead of tubarine if preferred

(5) If intubation is needed a small dose of scoline 25–50 mg may [illegible] immediately after the pentothal to produce a transitory relaxation for the passage of a tube

(6) If the surgeon requires a bloodless field the patient is put into the reverse Trendelenburg position after induction Intravenous injections of hexamethonium bromide (Cb) are given commencing with 50 100 mg and following up with doses of 20–30 mg according to the extent of the fall following the previous injection When the blood pressure falls to 60 65 systolic injections should cease Frequent blood pressure readings should be taken throughout the operation If the systolic falls below 75 mm Hg the table should be flattened If there is no rise methedrine 5 mg intravenously should be given

It will be seen from the foregoing summary of progress in anæsthesia over the past twenty years that although we have not yet achieved a perfect anæsthetic technique the past few years have advanced us well on the road towards it

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CHRONIC INTERMITTENT JUVENILE JAUNDICE

BY

Surgeon Lieutenant J M CLIFF, R N

The following single case of chronic intermittent juvenile jaundice is reported because of the importance of differentiating this type of jaundice from others of more serious prognostic importance

Case History —At routine medical examination on 10th October 1951 a 16-year old boy of excellent physique was found to have a minimal degree of jaundice There was no significant past medical history and no history of familial jaundice was obtained Jaundice was first noticed when he was a few days old he had had occasional digestive disturbances until the age of 5 but from that time there had been no symptoms although the slight but variable degree of icterus had persisted He had had no periodic attacks of lassitude the stools had never been pale and the urine never dark he had been taking a normal diet

On Examination —Height 68 in (173 cm) weight 154 lb (69 8 kg) Chest expansion 33 in –38 in No abnormality detected on the chest or the central nervous system Chest radiograph normal Blood pressure 140/80 Striæ atrophicæ over both buttocks On one occasion the tip of the spleen was thought to be palpable but this finding was not confirmed at subsequent examinations

Investigations (13 10 51) —Blood count R B C 5 430 000 Hb 107 per cent (15 8 grammes) colour index 1 0 mean cell diameter 7 2μ reticulocytes 0 9 per cent no nucleated red cells seen no spherocytosis packed cell volume 44 per cent W B C 6 300 polymorphs 56 per cent eosinophils 2 per cent lymphocytes 37 per cent monocytes 5 per cent no abnormal cells seen slight shift to the left on the Arneth

[illegible] reacts [illegible] R[illegible] [illegible] 100 per [illegible] cells [illegible] [illegible]

A[illegible] Ap[illegible] [illegible] tion tests [illegible]

[illegible]quently [illegible]

COMMENT

Chronic intermittent juvenile jaundice is characterized by a life-long non-haemolytic icterus of varying intensity with a positive indirect van den Bergh reaction in the absence of any other evidence of defect in liver function. From time to time authors have reported patients with a benign form of jaundice in which the only abnormality has been a raised serum bilirubin, and Parkes Weber (1946) reported negative post-mortem findings in the case of a man who died at the age of 79 after being under observation for twenty-nine years. Gilbert's name has been attached to this condition but it is probable that the cases described by him and his colleagues at the beginning of this century were in fact examples of a mild haemolytic jaundice, and the present title has been suggested by Meulengracht until further knowledge of the cause is available.

Dameshek and Singer (1941) reported on 11 individuals in two families, none of them showing evidence of liver disease, splenomegaly, increased fragility of the erythrocytes or reticulocytosis. The urinary urobilinogen was being increased and the stool urobilinogen normal or even decreased; they found that there was delay in the excretion of injected bilirubin from the blood, and considered that this might be due to some alteration in the permeability of the liver cells to bilirubin.

Alwall (1946) described 13 cases aged 19 to 40, 7 of them with marked dyspeptic symptoms, and came to the conclusion that this form of jaundice was of importance because it was common rather than rare. His patients showed a jaundice which varied in intensity but the fecal urobilinogen was normal although there was sometimes an excess of urinary urobilinogen. The hippuric acid test was sometimes positive, but in 4 of his cases an acute hepatitis could have been responsible for the persistent icterus. He noticed that a raised serum bilirubin was common in the relatives of his patients.

Meulengracht ([illegible]) reviewed [illegible] cases [illegible] They had all [illegible] of the jaundice or periodic attacks of lassitude, and he regarded the latter as characteristic; none showed the features of a haemolytic jaundice or subacute or chronic hepatitis. He considered that there was definite evidence of a hereditary factor and he found the prognosis to be excellent, the clinical picture usually tending to fade; he added that a number of factors (alcoholic excess, fatigue, excitement and intercurrent infections) appeared to aggravate the symptoms.

Curry, Greenwalt and Tat (1942) noted a patient on whom splenectomy had been performed without benefit after an erroneous diagnosis of an atypical acholuric jaundice, and found that his sister had a marked bilirubinaemia. In Barron's case (1946) the jaundice increased in the presence of cellulitis of the arm and also during an exacerbation of a chronic bronchiectasis; liver biopsy revealed no abnormality, a finding confirmed by other authors. Randle, Smith and Meade (1952) added 5 cases, 3 in one family; in 1 patient cholecystectomy had been performed, numerous currant-like stones being found, and in 2 others bilirubin was present in the urine (Fouchet test), a feature which they suggested might be related to a higher serum bilirubin concentration.

Many other single or small groups of cases have been reported, but no adequate theory has been put forward to explain the persistent bilirubinaemia. Before the diagnosis can be entertained the type of subacute hepatitis of insidious onset described by Kelsall, Stewart and Witts (1947) must be excluded, the common symptoms and signs being fever, dyspepsia, bleeding from oesophageal varices, jaundice, ascites, hepatomegaly, splenomegaly and spider naevi. In detecting latent cases of congenital haemolytic jaundice Young (1947) reported on the value of estimating the red cell fragility after incubation at 37° C. for twenty-four hours and suggested that this test might prove to be specific. Varadi (1951) confirmed this greatly increased fragility after incubation and this procedure is now carried out in many laboratories, but the experiences of Stevens and Stamm (1951) in a patient with ulcerative colitis indicate that there may be difficulty in interpreting this "combined fragility" test.

My thanks are due to Dr. L. C. Hill and Dr. H. J. Gibson for making available their laboratory investigations and clinical notes of this case.

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AN UNUSUAL CASE OF INTESTINAL TUMOUR

BY

Surgeon Commander H L CLEAVE, R N

[illegible] patient, a Sub-Lieutenant R N, first complained of vague lower abdominal [illegible] and flatulence about the middle of January 1951. There was no [illegible] and no [illegible]. The appetite became capricious. His bowel habits changed from complete regularity to periods of constipation alternating with loose motions. As this [illegible] did not clear up he was sent to R N Hospital Chatham for investigation on 16th [illegible] 1951.

On admission the patient denied feeling ill and stated that he felt better than he had been recently. Bowels were open for two days. Micturition and urine were normal.

On Examination.—The only positive findings were a furred tongue and an abdominal [illegible] pelvic swelling. The abdominal mass was not tender, was very hard, and [illegible] deep to the lowest fifth of the right rectus muscle. It was roughly [illegible] the [illegible] Rectal examination revealed a very hard mass that [illegible] either in the left seminal vesicle or just above it. The finger could [illegible] mass which appeared to have no connexion with the abdominal swelling. The [illegible] and testes were clinically normal. A recent X-ray was within normal limits. The [illegible] E S R (Wintrobe) was 22 mm in one hour. A full blood examination [illegible] cells was normal. T P R were normal.

It was thought that this patient had a primary seminal vesicle [illegible]—possibly tuberculous—which was in some way connected with the abdominal swelling. The possibility of a tumour was also considered.

The patient was referred to the Genito-Urinary Specialist for an opinion on [illegible] and seminal vesicles and cystoscopy was performed under general anaesthesia on [illegible] February 1951. The left side and dome of the bladder were [illegible] a [illegible] spherical smooth swelling. The urethra, prostate, bladder mucosa and ureteric orifices revealed no abnormality.

While the cystoscopy was in progress it was noted that the light of the cystoscope [illegible] through the lower abdominal wall. Once again both the abdominal and pelvic tumours were examined and the essential point was that they felt stony hard and were distinct.

On 23rd February 1951 the patient looked ill for the first time and complained of hypogastric pain and tenderness across the lower abdomen. A laparotomy was advised and carried out via a right sub-umbilical paramedian incision. A large [illegible] abscess was found which stretched from the right side of the pelvis [illegible] to the left and [illegible] into the pelvis. The contents were thick and purulent. [illegible] The walls of the cavity were sloughing. This was communicated [illegible] towards the mid line and a mass [illegible] the bladder. The mass was believed to be the appendix wrapped round [illegible] of ileum adherent to it. It was [illegible] impossible [illegible] peritonitis and no evidence of [illegible] A large [illegible] abscess cavity, sulphanilamide powder [illegible] and the [illegible] closed.

Following the operation the patient developed [illegible] course of penicillin and streptomycin. The [illegible] but on 28th February he developed [illegible]

[illegible]

[illegible]

[illegible]

Correspondence

DEAR SIR

The opposite to claustrophobia is not thalassophobia which is not fear of [illegible] Xenophon's Ten Thousand when they caught their long hoped for [illegible] of the Euxine did not exclaim An open space! An open space! [illegible] The Sea! The Sea! Thalassophobia the ward of a pedant [illegible] fear of the sea the opposite to claustrophobia of course is agora[illegible]bia

Heraclius one of the greatest of the Byzantine emperors suffered from neither agoraphobia nor thalassophobia either of which would have effectually prevented the first his victorious campaigns the second his very accession to the throne of the Eastern Empire for he travelled from Egypt which his father ruled as Exarch to Constantinople by sea when fortune and opportunity brought the supreme power within his grasp On his return from the conquest of Persia he entered Constantinople in a chariot drawn by elephants and it was in deference to the alleged thalassophobia of these beasts that the pontoon bridge across the Bosphorus was lined with shrubbery

King James the First suffered from no morbid fear of swords although the many attempts made on his life may well have included a hearty fear of assassins The tremor which occasioned so much danger to Sir Kenelm Digby and to many other recipients of the accolade was physical in origin and increased with age King James's physical defects were not confined to a tremor He also stammered was ungainly in gait and stance and was rickety Perhaps he suffered from spastic paraplegia? Another better informed reader of your journal may be able to throw light upon the question

I refer of course to the entry Compulsion Neurosis in the article Classified Medical References in the Works of Shakespeare in the Winter 1953 number of the Journal

ROYAL NAVAL HOSPITAL
HASLAR
GOSPORT
18th April 1953

I remain, Sir
Your obedient servant,
C H JOYNT
Surgeon Commander R N

The Editors referred this letter to Surgeon Commander J W L Crosfill who replies as follows

Agoraphobia is of course the well known antonym to claustrophobia and means fear of open spaces on *land* and with strict regard to semantics should be confined to such conditions It does not refer to any fear of the earth land soil etc but to the openness of the immediate landscape In the same way thalassophobia is applied to the openness of a seascape and does not imply fear of the sea or water itself which fear might perhaps be specifically designated by dropheha with some qualification particularizing the sea itself Agoraphobia and thalassophobia have therefore in my interpretation the same connotation in that they are both expressive of fear of open spaces each referring specifically to the ambient topography I suppose the pure antonym of claustrophobia

might be expected [illegible] thrust in spite [illegible] the word curtsy [illegible] thought of this [illegible] Elsnott (which [illegible] of spite commonly [illegible] means courtesy [illegible] [illegible] phobists) is [illegible] Curnastus [illegible] who himself is obstructing Gelineau [illegible] maladies [illegible] Paris 1804 [illegible] quoti Gould Agoraphobia [illegible] an open space and is sometimes called kenophobia Thus [illegible] the fear of the view of immense spaces or unobstructed expanses The Emperor Heraclius at the age of 59 had an insurmountable fear of the [illegible] sea and it is said that when he crossed the Bosphorus in a ship of [illegible] garnished in both sides with plants and trees obscuring all [illegible] sea over which the Emperor peacefully transited on his ship

With regard to James I and his ichnophobia [illegible] an illustrious sufferer of this phobia was James I of England who could [illegible] tolerate the appearance of a drawn sword Unfortunately I made [illegible] pertinent note of the reference in which the knighting of Sir Kenelm Digby was mentioned in which it was described how some bystander whose name I have forgotten had to hold the King's sword hand during the accolade A 500 want this reply quickly I cannot search through my literature [illegible] Of course I agree that the tremor might have had other diagnostic significance but unfortunately at this distance of time no accurate diagnosis is possible and one can only recount popular contemporary opinions In support of the suggestion that James did fear pointed weapons (1) He was afraid [illegible] more corpulent through his clothes than in his body and fat enough [illegible] doublets quilted for stiletto proof He was naturally of a timorous disposition which was the reason of his quilted doublets His tongue too large for his mouth and made him drink very inelegantly as if eating his drink which came out into the cup at each side of his mouth His legs were very weak having as some thought some foul play in his youth or rather before he was born that he was not able to stand at 7 years of age that weakness made him ever leaning on other men's shoulders his walk was ever [illegible] (Weldon's Character of King James in Lucy Aikin's Memoirs of the Court of King James I Osborn's traditional Memoirs of King James in an eye witness account says he had a horn instead of a sword by his side (Aikin *ibid*) The same authoress quotes the King as saying that he trembled at the approach of a pedagogue and says that the King died of a tertian ague and that there was a history of gout and in his latter years addiction to alcohol In the Netherlands the King was caricatured in comedy (Aikin *ibid*) by being shown as either wearing an empty scabbard or else wearing a sword which was resisting the attempts of the courtiers who were trying to withdraw it The implication of this latter is meant to be the King's unwillingness to come to the assistance of the Netherlands but and this is only my suggestion may depend for its point on the contemporary belief in the King's aversion to swords He was fond however of hunting so presumably his physical disability which might well have been a spastic paraplegia was not sufficient to prevent such activities

Reviews

[illegible]

[illegible] 1982 [illegible]

[illegible]

[illegible] 1953 [illegible]

[illegible]

[illegible] Professor [illegible] M.D. [illegible] M.B. [illegible] Medicine in the University of Leeds [illegible] Marshall M.D. [illegible] Honorary Medical Consultant [illegible] Leeds. [illegible] 1st July 1961. [illegible] Price [illegible]

[illegible] of this publication [illegible] volumes [illegible] the first [illegible] the Yorkshire [illegible] the [illegible] [illegible] [illegible]

[illegible]

BOOKS RECEIVED

[illegible] Technical Report Series No 64 32 pages [illegible]
[illegible] [illegible] Edition

We acknowledge with thanks receipt of the following publications

Annales Medicinae Internae Fenniae [illegible] *Annali di Medicina Navale e Tropicale* [illegible] *Journal of Tropical Medicine & Parasitology* [illegible] *Australian Journal of Experimental Biology & Medical Science* [illegible] *British Journal of Surgery* [illegible] *British Medical Journal* [illegible] *Bulletin International des Services de Santé* [illegible] *Bulletin of the World Health Organization* [illegible] *Chronicle of the World Health Organization* [illegible] *Guy's Hospital Gazette* [illegible] *Journal of the Bowman Gray School of Medicine* [illegible] *Journal of the International College of Surgeons* [illegible] *Journal of the Irish Medical Association* [illegible] *Journal of the Royal Army Medical Corps* [illegible] *Journal of the Royal Naval Medical Service* [illegible] *Medical Press* [illegible] *Medical Journal of Australia* [illegible] *Medical Journal of the Duke University* [illegible] *Middlesex Hospital Journal* [illegible] *Military Medical Journal* [illegible] *Military Surgeon* [illegible] *Nigerian Journal of Medical Science* [illegible] *Proceedings of the Staff Meetings of the Mayo Clinic* [illegible] *Revista Portuguesa de Medicina Militar* [illegible] *Revista de Medicina Naval* [illegible] *Revue Médicale de la Marine* [illegible] *Shiloh Hospital Bulletin* [illegible] *St Mary's Hospital Gazette* [illegible] *Sudan Medical Service Journal* [illegible] *Texas Reports on Biology & Medicine* [illegible] *Tohoku Journal of Experimental Medicine* [illegible] *Tropical Diseases Bulletin* [illegible] *United States Armed Forces Medical Journal* [illegible] *United States Naval Medical Bulletin* [illegible]

ROYAL NAVAL MEDICAL SCHOOL

(1) The following staff changes are reported

28th March 1973 Surgeon Captain (D) C J Flanagan L D S R N joined as Director of Dental Studies vice Brigham

13th April 1973 Surgeon Lieutenant C O L Hughes R N, joined for duty at A E R E Harwell

27th April 1973 Surgeon Lieutenant C Rashbass R N V R joined for duty at R N Physiological Laboratory

(2) The Medical Officer in Charge Surgeon Captain J G Holmes attended the Senior Officer's course at the Civil Defence Staff College Sunningdale during February 1973 subsequently on 15th March 1971 he lectured at the School on The Organization of Civil Defence

(3) The courses on Radiological Warfare for medical and dental and nursing officers continue to be held Up to the end of April 1973 the total who have attended is 3 257

(4) N A T O Officers Courses Two courses on Medical Aspects of Atomic

Biological and Chemical Warfare each of a fortnight's duration during April and May for medical officers Navy Army and Air Force Representatives attended from Belgium Denmark Greece Italy Netherlands Norway Portugal U S A and U K In addition to lectures etc at the school a visit was made to H M S *Vanguard* where the medical and A B C D organizations were demonstrated A tour around R N Hospital Haslar was personally conducted by the Medical Officer in Charge who outlined the casualty organization as carried out in the late war

At H M S *Phoenix* lectures and demonstrations were given on chemical warfare

The Civil Defence Corps in Portsmouth actively co-operated with a most realistic demonstration of casualty rescue first aid treatment evacuation and hospital reception

(5) Symposium of Occupational Health A Symposium was held during the week 11th May on Medical and Scientific aspects of Occupational Health in H M Ships and Admiralty establishments Some 100 officers of medical dental and other branches of the Service and also representatives of the R A M C and R A F M S attended some or all of the sessions

The programme was as follows

Date	*Time*	*Title of Lecture*	*Name and Status of Lecturer*
11th May	0915	Opening Address	Surgeon Vice Admiral Sir Alexander Ingleby Mackenzie *K B E C B* D S O M V O Medical Director General of the Navy
	0930	The Work of H M Dockyard Portsmouth	Rear Admiral A F V Hibbert *C B E* Admiral Superintendent H M Dockyard Portsmouth
	1015	The Lighting Services and Work	Dr I R A Mercer Hon *C B E* F R S Ed M D F R C P D P H Senior Medical Inspector of Factories Ministry of Labour
	1115	Personnel selection	Dr S A B Wilson B Sc Ph D Senior Psychologist to the Admiralty
	1145	Industrial climate and well being in relation to performance	Dr F Bellamy D S Director of M R C Human Industrial Physiological Research Unit
	1530	Occupational Health in private ships experimental and current activities	Mr R C Frederick *D B E* F R I C Adviser on Applied Hygiene to Medical Director General R N Medical Service
12th May	0930	All day visit to H M Dockyard Portsmouth	Lectures arranged by Senior Engineer Officer C H E Southall Smith D S O O B E Senior Medical Officer H M Dockyard
13th May	0930	Forenoon visit to R N Aircraft Repair Yard Fleetlands	Lectures and demonstrations by Surgeon Commander (A) W W Robinson M B E D P H Naval Medical Officer of Health (Air)
	1415	Health hazards in explosive and propellant factories	Dr N Lang-Lloyd M B M R C P Chief Medical Officer Ministry of Supply
	1530	Ophthalmic hazards in industry	Mr J Mann F R C S Ophthalmic Surgeon Haslar General Hospital

Date	*Time*	*Title of Lecture*	*Name and Status of Lecturer*
14th May	0930	Injuries in industry—prevention and treatment	Dr H D P Pierce MD D P H D I H Chief Medical Officer Ford Motor Co
	1115	Problems of rehabilitation	Group Captain C J S O'Muller *C B E* M B R A F (Rtd)
	1415	Dermatological hazards of Occupation	Dr Sibyl Horner M B D P H Deputy Senior Medical Inspector of Factories Ministry of Labour
	1540	Lung cancer—Cause or Disease	Dr W H M Paton M D R C M Medical Unit University College Hospital London
15th May	0930	The pneumoconioses	Dr A J G MacLaughlin M D F R C P Medical Inspector of Factories Ministry of Labour
	1115	The effects of radiation, radiation in industry	Mr K T Crisp M Sc F Inst P Factory Department Ministry of Labour
	1415	Dental hazards in industry	Surgeon Captain (D) C J Finnigan F D S Director of Studies R N Medical School
	1500	The Factory Medical Officer in the Dockyard	Surgeon Commander G H G Southwell Snider D F H F I H Senior Medical Officer H M Dockyard Portsmouth
	1600	Industrial toxicology	Surgeon Captain J G Holmes *O B E* M A M B Medical Officer in Charge and Director of Medical Studies R N Medical School

Lectures were followed by discussion and questions

On Tuesday, H M Dockyard Portsmouth on Tuesday 12th May the Chairman of the Naval Industrial Welfare Committee and the Safety Officer gave short addresses explaining their particular duties and problems. Demonstrations were then given of wet sand blasting (impact asbestos) spraying metal spraying metal casting trimming and sand blasting. The visit to the yard included a tour of the main factories and joiners shops and of H M S *Victorious* which is undergoing extensive reconstruction.

The visit to the R N Aircraft Repair Yard Fleetlands demonstrated the hazards associated with kerosene and petroleum solvents and degreasers paint removers salt baths (sodium nitrate and potassium nitrate in molten form for reducing such metals as duralumin to a malleable form hydrofluoric acid for stripping anodic film from metal, sulphuric acid for anodizing metals potassium dichromate for protective sealing cyanide for case hardening of steel) electroplating (chrome copper cadmium zinc etc) luminizing and X rays doping.

The lectures and demonstrations were most instructive and gave the naval medical officer a very clear insight of the problems associated with work in the Dock and Repair Yards as well as most interesting information on the enormous scope of Industrial Medicine.

(b) Two meetings of Dental Officers of the Portsmouth area were held on 19th February and 19th May when instructional films of dental interest were shown.

At the second meeting Surgeon Captain (D) C J Finnigan gave a summary of the Duties Functions and Responsibilities of the Director of Dental Studies and exhibited instructional models in acrylic and soft acrylic (Carvic 8U) which had been made for the annual meeting of the British Dental Association at Buxton in July

There was a full attendance of dental officers and among the visiting officers present were Surgeon Rear Admiral J Hamilton *C B E* Q H S Surgeon Rear Admiral (D) F R P Williams *C B E* Q H D S Surgeon Captain J G Maguire *C B E* Surgeon Captain (D) R M Finlayson Plymouth Surgeon Captain (D) P Hunt Chatham Surgeon Commander (D) P J Ward R A N H M S *Sydney* R C Frechrick Esq *M B E* F R I C R N S S

ROYAL NAVY MEDICAL CLUB ANNUAL DINNER 1953

The Annual Dinner and Meeting of the Royal Navy Medical Club took place at the Royal Naval College Greenwich on Friday the 24th April The Medical Director General Surgeon Vice Admiral Sir Alexander Hughes Mackenzie *K B E C B* Q H P took the chair

Sir Alexander and Surgeon Rear Admiral A L Malone *C B* President of the Club welcomed Members and their guests in the Queen Mary Antechamber of the College The principal guests included Admiral Sir Michael Denny Sir John Laing General Sir Frederick Harris Air Marshal Kilpatrick Vice Admiral Sir Aubrey Mansergh Sir Russell Brain Rear Admiral Ross Sir William Kelsey Fry Sir Stanford Cade Dr Tish The Venerable Archdeacon Chamberlain and Captain A C C Mars I C The Company also included Lord Webb Johnson Sir Cecil Wakeley Sir Horace Evans Sir Clive Burn Colonel Sir Eric Gore Brown Surgeon Vice Admiral Sir Henry Colson Surgeon Vice Admiral Sir Edward Greesun Major General Wren Air Vice Marshal Ballantyne Sir James Patterson Ross Sir Harold Graham Hodgson Sir Gordon Gordon Taylor and Sir John Rowlands

After the reception and Annual Business meeting the Medical Director General led the Company to dinner in the Painted Hall to the traditional accompaniment of the Band of the Commander in Chief the Nore

The Loyal Toast having been honoured the Medical Director General rose to propose the toast of the Club He began Mr Lord and Gentlemen my first duty tonight is to welcome you all to this dinner but before doing so I must thank those people present who have made it possible for us to hold the annual dinner of the Royal Naval Medical Club in this beautiful Painted Hall First and foremost of them is of course the President of the College Admiral Sir Aubrey Mansergh then Captain Myers the Captain of the College, the well known Mess Secretary Captain (S) Herbert who has been a great help in the organization of this party and the preparation of this delicious menu and the provision of the various wines

As you all well know this is the first occasion that we have held this dinner at Greenwich It has for years been held at the Trocadero restaurant

in London but it is quite obvious that the project has met with general approval as we have about a hundred more attending than ever before

Without infringing the copyright of the speaker who is proposing the health of the guests I must extend a very hearty general welcome to everyone present this evening It is especially delightful to see all our honoured guests both official and private amongst them being Lord Webb Johnson certain members of the Board of Admiralty the President of the Royal College of Physicians Sir Russell Brain the heads of the Medical and Dental Services of the Army and the Royal Air Force the Chaplain of the Fleet and many others

Then we must welcome the members of the Club themselves both those on the active list as well as those on the retired list and of the latter I am particularly glad to see my two immediate predecessors Sir Henry Colson and Sir Edward Greeson It is extremely satisfying also to see the R N V R Officers who so nobly came to help us in time of war and whom also we are always so delighted to welcome for their period of training and at other times as well I hope that they will all realize how valuable they are to us and that they will sound the clarion in their respective divisions and recruit as many fresh members as they can

And now I come to the Consultants and that very fine body of Surgeons and Physicians who so nobly give their services to the cause of Naval medicine They are headed by the President of the Royal College of Surgeons Sir Cecil Wakeley one of the busiest men in the country and indeed one might say in the British Commonwealth of Nations, so that one is left in awe and wonder as to how he manages to get through all the work he does With him are Sir Alan Rowlands Sir Gordon Gordon Taylor Sir James Patterson Ross Sir Harold Graham Hodgson the Chest Physicians and Surgeons and all the others whose names are so well known and so treasured by all of us They give their untiring service and as an example I may mention a case which occurred the other day A call was received from Malta one afternoon for a Consultant Physician to go to Malta at once to hold a consultation on a very important case at that hospital The message was received at 3 30 p m contact was immediately made with the Physician in question arrangements were made with Movements at the Admiralty and at 8 a m the following morning he was airborne *en route* for the George Cross Island and how well worth while his visit was

I know that it has been the custom in the past for the President at this dinner to give a review of the events of the past year I do not propose to dwell on this unduly because most of you have full knowledge of the doings of the Medical and Dental Branches But I would like to mention the continuing splendid work of our naval hospitals which are the backbone of our service the great efforts of our doctors and dentists on active service in Korean waters and last but by no means least the enthusiasm and work of the R N Medical School at Alverstoke The officers there are to be congratulated on the excellent symposium which they organized and conducted last May on Underwater Warfare This year and in May there is to be a

[illegible] on Industrial Medicine and Occupational Health which I personally regard of great importance as this affects all medical officers seeing that each ship and establishment with its engine and boiler rooms its galleys and bakeries and its various workshops is a factory in itself and so each medical officer must acquit himself to be well versed in these important subjects

Our reciprocal arrangements with our sister services and with the National Health Service are working better than ever and it is highly satisfactory that they exist as they do because this enlarges enormously the scope and opportunity of the professional work in the services so that it is now nothing more than a delusion to think that the service medical officer does not get as good a chance for high class professional work and opportunity as his civilian counterpart

There has been one great advance in the dental branch namely the promotion of the senior officer of the Branch to Surgeon Rear Admiral (D) We all know how well deserved this is and we congratulate him and the Dental Branch most heartily on it

As with the medical branch the dental branch is also woefully short of officers on its permanent list and accordingly I ask all members of the medical and dental professions present here this evening when they return to their hospitals their clinics and their practices to spread the gospel abroad on behalf of the services all three of them as to what good professional opportunities now exist in the services and what a good life from every point of view any keen young doctor or dentist can now have in the service of his choice

The toast of the Guests was proposed by Surgeon Commander J L S Coulter who welcomed the Principal and other Guests with much humour and adroit sallies at the array of talent present The Company appreciated the mild eccentricities which play such a part in Naval life such as the Speaker's introduction to and subsequent meeting with one of the Admirals who had honoured us with his presence while harassed Surgeon Rear Admirals and Principal Medical Officers will be able to take a new attitude towards Admiralty correspondence in the light of Surgeon Commander Coulter's observations of the chronological habits of Civil Servants

Sir Russell Brain replied on behalf of the guests and the Company then adjourned to the Queen Mary Ante room where Members had an opportunity of meeting each other and renewing old friendships

The holding of the 1953 Annual Dinner at Greenwich marked a new departure from established custom Active Service Regular and Reserve Officers attended in uniform and the Company dined in accordance with the customs of the Service and in a setting which from an architectural and historical viewpoint could only be described as unique

The popularity of the College would appear to be established judging from the record attendance of 240 Members and guests and from the Auditors comment that they consider the number of subscriptions to the Club for the current year to be quite exceptional It was encouraging to see a considerable

number of younger officers present and it is hoped that next year even more will attend.

30 Members availed themselves of the opportunity of staying the night at Greenwich and were thus enabled to make a gentle start next morning after an excellent breakfast.

AUDITORS' REPORT

The accounts of the R.N. Medical Club are presented this year in a new form which we hope will give a clearer picture of the Club's financial position and will prove of some interest. Owing to the fact that the Annual Dinner is always held in the middle of the financial year the former practice of including at the end of the Income and Expenditure Account only the expenses of the dinner being spread over two months has frequently resulted in the expenses of the dinner being spread over two months. It is proposed that in future the main should run for the period 1st July to 30th June. In this way all expenditure on the dinner has been met and it is possible to present a truer account of the Club's position.

For the period 1st March 1952 to 30th June 1953 the excess of expenditure over income was £11 18s 2d. However the accounts include £87 17s 9d received from the 1952 dinner. Thus when this has been allowed for the Club shows a profit for the nine months of £75 19s 7d. This profit is due almost entirely to the higher level of interest rates this year.

The total subscriptions and grants for the 1953 dinner were £446 12s. 10d. Members' subscriptions £80 2s. 8d. so that the Club subsidised the dinner by £365 10s. 2d.

The Club has a small investment of £200 6s. 9d. 2½% Consolidated Stock which is held without charge by the Bank. The value of this stock on the basis of the Club financial year is £150 0s. 0d. and it is from this sum that subscriptions are paid. These are all arrears. The Auditors have not been able to find out from the Bank the cost of the Club's holding but they feel it would be preferable for the Bank to be instructed to give this information. The income from subscriptions should be sufficient to cover the present annual expenditure.

The Club's liabilities at 30th June 1953 amounted to £140. As pointed out in the Treasurer's report, the Club's assets are sufficient to cover these liabilities and the Auditors are of the opinion that the Secretary should be relieved of the responsibility of keeping the Club's funds in his private banking account.

(Sgd.) J. M. HUTCHISON
Surgeon Commander
(Sgd.) JACK L. S. CLEETON
Surgeon Commander
Auditors

ROYAL NAVAL MEDICAL CLUB

INCOME AND EXPENDITURE ACCOUNT FROM 1st MARCH 1952 [illegible] 1953

EXPENDITURE

	£ s. d.	£ s. d.
Expenses of 1952 Dinner Carried over		
Gratuities	17 7 0	
Catering	62 14 1	
Adverts	5 5 0	
Sundries	2 18 0	
	— —	87 17 9
1953 Dinner		
R.N.C. Tables	13 0 0	
Catering	390 0 0	
Transport	13 15 0	
		416 15 9
Secretarial Expenses		
Typing and printing	16 3 9	
Band Fees	2 10 0	
Telephone etc.	6 4 1	
		25 17 10
Photographs for Club records		4 10 0
Bank charges		1 6 0
Refunds to Members		8 16 0
		£544 13 1

INCOME

	£ s. d.	£ s. d.
Subscriptions	[illegible] 13 0	
Members payments for Dinner and transport	48 [illegible] 5	
Dividends from securities	[illegible] 1 4	
P.O. Savings interest	1 8 4	
Refund from Times Fund Co.	1 0 0	
Refund from C.I.W.W.	1 10 1	
Balance of expenditure over income	11 18 [illegible]	
		£544 13 1

CASH ACCOUNT

CASH ASSETS

	£ s. d.	£ s. d.
Balance at Bank	140 [illegible] 7	
Balance due to R.N.S.H. (With accrued interest to 30th June 1953 estimated)	93 5 7	
Cash in hand		
	£234 8 1	

LIABILITIES

	£ s. d.	£ s. d.
Improvement Reserve		4 16 [illegible]
Cash with Secretary		7 4
[illegible]	[illegible]	8 0 4
	[illegible]	13 5

Securities held by Royal Bank

£434 17s. 6d. 4% Consolidated Stock (Inscribed in name of Cox's Nominees Ltd.)

£100 0s. 0d. 2½% Defence Bonds 1st Office Issue

£100 0s. 0d. 3% Defence Bonds Third Issue

£300 0s. 0d. 4% War Stock

[illegible]

News of the Service

OBITUARY

[illegible] th and extend our sympathy to his relatives
[illegible] M — Mason R.N. (Rtd.) died on the 28th February 1953. [illegible] qualified in 1910 and entered the R.N. Medical Service as a [illegible] 1910. He was promoted to Surgeon Lieutenant-Commander [illegible] Surgeon Commander in May 1922 and was placed on the Retired List [illegible] August 1926. During World War I Surgeon Commander Mason [illegible] *Queen Mary, Jonquil, Honeysuckle, Laurel* and *Pyramus*.

HONOURS AND AWARDS

Commander of the Order of the British Empire

[illegible] Weldon R.N.

Officer of the Order of the British Empire

[illegible] J. M. Reese R.N.

Gilbert Blane Medal 1953

The Gilbert Blane Medal for the year 1953 has been awarded to Surgeon Captain J. G. Holmes [illegible] M.B. B.Ch. R.N.

PROMOTIONS

To Surgeon Captain [illegible] J. H. Nicolson

To Surgeon [illegible] A. St. Clair Hiley, P. G. Rowsell, C. M. Lamont, G. S. [illegible] P. B. Nicol, W. M. Davidson

To [illegible] — A. J. Rogers

To [illegible] Commander — A. J. Gaskell

To Surgeon Lieutenant Commander — W. H. B. Willis, R. Deans, P. N. G. Dawson, [illegible] C. Martin, B. Geoghegan, R. H. Cowling

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenants J. G. H. Sheppard, G. W. [illegible] J. M. Haughton, L. J. Lovered [illegible] (Permanent List). Surgeon Lieutenants (D) P. J. Brown, G. J. Boyd (Emerg [illegible]

ENTRIES FOR SHORT SERVICE COMMISSION

M. R. Custer M.R.C.S. L.R.C.P., P. J. Keith M.B. Ch.B., R. V. Williams M.B. [illegible] J. J. Carrn M.B. B.S., J. R. Lawrence Owen L.M.S.S.A., T. R. Lyle M.B. [illegible] J. C. J. Stoke M.B. B.S., M. D. Prosser B.D.S. Temporary Surgeon Lieutenant [illegible] M. Nutt R.N.V.R. and Temporary Surgeon Lieutenant (D) J. F. Sutclas R.N.V.R. [illegible] Short Service Commissions

RETIREMENTS

Surgeon Commanders F. M. Duthie, M. B. Delane

WARDMASTER OFFICERS

HONOURS AND AWARDS

Member of the Order of the British Empire

Senior Commissioned Wardmaster W. P. Silk, R.N.

PROMOTIONS

To Wardmaster Lieutenant: Senior Commissioned Wardmaster W. G. Blight, *M.B.E.*

To Senior Commissioned Wardmaster: Commissioned Wardmaster W. G. Sanders, W.C.S.M., *M.B.E.*; W. H. P. Williams, M.C.S.I., (I.I.I.)

To Commissioned Wardmaster: S.B.C.I.O. P/MX 47713 W. L. Dowsett, S.B.C.I.O. P/MX/47827 K. R. Lewis.

RETIREMENTS

Wardmaster Lieutenant V. H. Hutley, *M.B.E.*; Commissioned Wardmaster V. H. Weeks, *D.S.M.*

ROYAL NAVAL VOLUNTEER RESERVE

PROMOTIONS

To Surgeon Captain—K. Forsythe.

To Surgeon Commander—J. F. Foulkes, A. R. Harper, T. S. Farrell.

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

HONOURS AND AWARDS

Commander of the Order of the British Empire

Miss J. K. Gillanders, R.R.C., Q.H.N.S., Matron-in-Chief, Q.A.R.N.N.S.

Member of the Royal Red Cross

Miss K. V. Chapman, A.R.R.C., Principal Matron, Q.A.R.N.N.S.

Associate of the Royal Red Cross

Miss M. Smith, Senior Nursing Sister, Q.A.R.N.N.S.

PROMOTIONS

To Principal Matron, Superintending Sister: Miss K. V. Chapman, *A.R.R.C.*, 1st June 1959.

To Matron-in-Chief: Principal Matron Miss K. V. Chapman, *R.R.C.*, 14th July 1958.

To Superintending Nursing Sister: Senior Nursing Sister Miss A. D. Cooling.

RETIREMENTS

Matron-in-Chief Miss J. K. Gillanders, *C.B.E.*, *R.R.C.*, *Q.H.N.S.*; Principal Matron Miss K. M. Cooper, *R.R.C.*

ADMIRALTY FLEET ORDERS

903 —Geneva Conventions—Protection of Medical etc Personnel in War—Armlets and Certificates

907 Officers—Medical and Dental Officers—Transfer to the Permanent List

939 —Victualling Stores for Medical and Dental Services (Formerly Medical and Dental Stores)—Supplies to Shore Establishments in the United Kingdom

967 —Medical, Hospital and Dental Treatment Abroad—Supply of Surgical Appliances to Naval Families—Charges

1034 —Medical—National Blood Transfusion Service—Co operation with and Facilities for

1077 —Victualling Stores for Medical Services—Scales and Allowances

1114 —Medical—Venereal Disease—Kahn Wassermann and Price Test Results

1137 —Medical Stores—Novox Resuscitation Apparatus—Replacement of the Mixture of Carbon Dioxide and Oxygen with Oxygen Only

1166 —Courses—General—Air Medical School—Courses of Instruction

1176 —Medical—Documentation—Introduction of New System

1177 —Medical—N A A F I Canteen Staff—Medical Examination and Treatment—Certificates of Employment—Medical Notations

1272 —Ratings—Sick Berth Staff—Shortage of Higher Ratings

1277 —Ratings—Sick Berth Staff—Instruction in Use of Service Afloat X-ray Unit

1363 —Medical Stores—R N Blood Transfusion Units—Numbers Held—REPORTS

1408 —Medical, Dental and Hospital Consultants

1428 Surgeons and Agents—South Atlantic Station

1431 —Officers—Dental Officers—Shortage

1432 —Officers—Medical Officers Serving in Aircraft Carriers and at Naval Air Stations—Flying Experience

1503 —Medical—R A F Medical Rehabilitation Units—Admission of R.N and R M Personnel

1506 —Prizes—Gilbert Blane Medal for Medical Officers R N —1953—Award Gilbert Blane Medal for Medical Officers R N —1954—REPORTS

1514 —Surgeons and Agents—Bermuda—Appointments

1518 —Dental Officers and Dental Surgeries in Cruisers

1519 —Medical Research—Co ordination—REPORTS

1592 —Medical—Nursing—Approval of R.N Hospital Training School

1625 —Naval Stores—Photographic Darkroom Clock—Introduction

1626 —Naval Stores—Photographic—Machines, Print Drying and Glazing, Pattern 8830—Introduction

1659 —Courses—Ratings—Air Medical Procedure for Sick Berth Ratings

1668 —Medical—Documentation—R A N Personnel—Procedure

1727 —Medical Hospital and Dental Treatment Abroad

1732 —Q A R N N S—Matron in-Chief—Appointment

Notice

The [illegible] medical officers to send in original [illegible] all subjects travel [illegible] &c Items of news and [illegible] the naval medical [illegible] received from ships and establ[illegible] and foreign stations Notices [illegible] marriages and deaths [illegible] to subscribers

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The Harvard system should be employed for bibliographical references these references being arranged in alphabetical order of the authors names at the end The contribution thus Smith F G (1936) *J roy nav med Serv* **22** 53 In the text a reference to a publication should be cited by giving the author and in brackets the date thus Smith (1936) believed this to be due &c

All communications should reach the Editor one month before the first of the month preceding the date of issue Unless clearly written they should be typed in duplicate and on one side of the paper only and they should be addressed to The Editor Journal of the Royal Naval Medical Service Monckton House Alverstoke Gosport Hants

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Articles

JAMES LIND

Bicentenary of the Publication of the First Edition of His Treatise on Scurvy

THE Royal Naval Medical Service may be proud that the work of a former naval surgeon was so fittingly commemorated by the Nutrition Society of Great Britain when they held a special meeting at Edinburgh University on 22nd May 1953 to mark the bicentenary of James Lind's Treatise of the Scurvy.

Lind was born in Scotland in 1716, began his medical career in 1731 and entered the Royal Navy in 1739. He retired in 1748 and returned to Edinburgh where he took the M.D. degree and on 1st May 1750 he was elected a Fellow of the Royal College of Physicians of Edinburgh. In 1758 he was invited to become Physician in Charge of the Royal Hospital, Haslar, in succession to Dr George Cuthbert who had held the appointment since the hospital opened in 1753 and he remained in the post for twenty-five years, finally retiring on account of age in 1783. He died at Gosport on 13th July 1794.

It was in 1753 that "A Treatise of the Scurvy" was published, a book in which he gave a full account of the history, nature, causes and cure of the disease, and a chronological list of publications on the subject from 1564 onwards. His description of scurvy could scarcely be bettered today and his clinical trials of the various remedies was the first model of therapeutic research. Although he had proved in most convincing manner that lemon juice had both prophylactic and curative effects it was not until 1795, a year after his death and forty-two years after the publication of his Treatise, that the Admiralty approved the issue of lemon juice. A reprint of the first edition of Lind's treatise[1] with additional notes was published early in the year and was reviewed in our Summer issue.

The proceedings of the Edinburgh meeting opened with the conferring of the honorary degree of Doctor of Laws upon another distinguished former naval medical officer, Surgeon Vice-Admiral Sir Sheldon Dudley, *K.C.B.*, M.D., F.R.C.P., F.R.S., Medical Director-General of the Navy, 1941-5.

[1] Lind's Treatise on Scurvy. A Bicentenary Volume containing a reprint of the first edition of "A Treatise of the Scurvy." By James Lind, M.D., with additional notes. Edited by Dr C. P. Stewart and Dr Douglas Guthrie. Edinburgh University Press. 45s. 0d. net.

Sir Sh[illegible] of the Lind oration in w[illegible] I must th[illegible] of Edinburgh for all w[illegible] fu[illegible] Physician to the Fleet. Dr [illegible] bers, even to [illegible] I may be able to appr[illegible] Lind's m[illegible] all round doctor and pioneer of the health of the healthy. Lind's versatility is evident in his three great classics on Scurvy, Hygiene and Tropical Medicine, in each of which subjects he was a pioneer and an original investigator.

In the present century, however, is specialization has become narrower and narrower [illegible] ity in a medical man is not looked on with much favour. There are, however, many situations where such a restricted field of view is impossible, as in ships, small islands, primitive communities and sparsely populated areas where a complete battery of specialists could not find enough work even if they were subsidized by the State.

It is impossible to read Lind's works without being struck by his powers of accurate observation which at times savour of inspired intuition. First more than any other pre-Mansonian physician Lind accounted tropical fever with stinging insects, flies and mosquitoes, and in his book he mentions their absence as one of the four most important factors on the selection of a healthy human habitation. In preparing a site for a dwelling place he recommends what are unwittingly anti-mosquito measures, i.e. choosing high dry ground cutting back the scrub around human habitations and efficient drainage. Similarly he associated typhus in gaol fever with vermin in the infected clothes of the press-gang's victims, and his recommendations for the prevention of typhus could be a paraphrase of the delousing instruction to be found in any modern manual of military hygiene prior to the discovery of D.D.T.

Lind's genius banished from the navy scurvy and typhus, the two most merciless killers of seamen. As a result I myself am unable to add anything to Lind's clinical observations because, thanks to him in the forty years I followed Lind's vocation of preserving the health of sailors I never saw a seaman suffering from either scurvy or typhus.

It is therefore no idle fancy to assert that Lind as much as Nelson broke the power of Napoleon.

Lind's famous clinical investigation on scurvy whereby he proved patients on lemon juice were cured of scurvy whereas other patients treated without lemon juice at the same time and place failed to get well is the first properly controlled clinical therapeutic trial on record. Many medical scientists are prone to talk as if the controlled clinical trial of new drugs or other remedies is a characteristic of modern experimental medicine. Yet this technique was understood by Lind and carried out at sea two hundred years ago in H.M.S. *Salisbury*.

There is one last point I would like to make on scurvy which is very evident from the study of naval history and Lind's works. Naval experience is strong circumstantial evidence for the belief that only a very small average daily dose of ascorbic acid is necessary to maintain perfect health.

Similarly [illegible] in the nineteenth century is altogether in favour of the [illegible] food of biochemists who believe a maintenance dose of ascorbic acid [illegible] than above 10 mg a day. Anyway [illegible] men (citizens in the colossal [illegible] up to 300 mg daily some dietitians tried to persuade us it was my duty to force on the naval personnel.

Lind appears to have been one of those scientists who wholeheartedly agree with Thomas Huxley's dictum that the only honours worthy to be sought by a scientific man are those of his colleagues who are the only people in a position to judge the quality of his work.

It was well for Lind that he had colleagues like Trotter and Blane who could appreciate his worth and at the same time were not afraid to fight on the open for the welfare of the sailors. Without those loyal colleagues and a succession of wise sympathetic and exceptionally intelligent Admirals as Anson, Hawkins and Rodney Lind's recommendations for a real naval health service instead of only suffering a time lag of forty years might have had to await acceptance for a hundred and fifty years as they had to do ashore.

Lind the man of observation was the first hygienist to note the relative freedom of ships from tropical diseases he therefore pleaded for the routine use of ships moored off the coast as health resorts.

This empirical observation of Lind's was deliberately tested experimentally in the last war. A secret naval base was being constructed on a malarious tropical island. About 40 per cent. of the labourers employed on this work who as usual lived in temporary huts on the beach were continually sick with malaria. It was decided therefore when a Irish draft of 100 dockyard men were sent out to reinforce this working party that they were to occupy a hulk moored half a mile from the shore. Among the 400 men who did not leave their floating barracks by torchlight and drawn and quartered from malaria during their eighteen months residence aboard. Thus Lind's contention that hulks or ships moored off shore were the proper sites for barracks and workshops in unhealthy foreign stations made two hundred years ago received complete experimental justification in 1943.

In conclusion I will say a few words on a fundamental principle of health preservation which if not actually enunciated by Lind in so many words can be read into his recommendations. This observation or rather inference which was put forward by Lind for the first time is that the executive and administrative health authority must be identified in practical health preservation himself and take full responsibility for the public health.

Lind's influence is not yet worked out and it is hoped this bicentenary will reinvigorate the leaders of our profession till it long last a health officials on the Board of Admiralty and the War Council and we have a National Health Service entirely administered and controlled by health experts. Then we can remember that the long weary journey to this goal was started by Physician to the Fleet Dr. James Lind.

Sir Edward Mellanby as Chairman opened the first session of the Conference. In introducing Dame Harriette Chick Sir Edward briefly dis-

cussed th[illegible] which [illegible] of [illegible] the [illegible] which we [illegible] for [illegible] outstanding work [illegible]

Dame Harriette, in reviewing [1] early investigations of scurvy and the antiscorbutic vitamin, mentioned that in comparison with beriberi and pellagra, scurvy is the most ancient disease. It was likely that in mediaeval England in the late winter and spring a large proportion of the population suffered from scurvy since there would be little fresh vegetables and no potatoes. But it was among the seafaring communities where long voyages separated them from all fresh foods that scurvy was rife. She mentioned Admiral Hawkins' Report [2] in which he tells us that in twenty years at sea he had seen 10 000 cases and that he had suggested oranges and lemons as treatment. She recounted that remarkable tale [3] of a helpless Greenland sailor who, having lost the use of his arms and legs from scurvy, was put ashore by his shipmates to die. As he could only crawl about the ground, he grazed like a beast of the field on the local grass and in a short time was fully recovered. This was scurvy grass (*Cochlearia officinalis*). She recounted Lind's own description of the classic experiment [4] and suggested that Bachstrom and Lind should be given the credit for recognizing scurvy as a nutritional disease and for the precise measures necessary for its prevention and cure, while credit is due to Captain Cook for the successful demonstration [5] of these measures in practice. It was largely due to the influence of Sir Gilbert Blane [6] and Dr Blair [7] that a scheduled allowance of lemon juice for the R.N. was introduced officially for all seamen daily to be issued after two weeks at sea. Blane and Blair were helped in their efforts by the recent experiences of H.M.S. *Suffolk* who had in 1794 completed a twenty three week voyage without the loss of a single man due to scurvy [8]. It is astonishing to note that in 1780 there were 1 457 cases of scurvy admitted to the R.N.H. Haslar whereas between 1806 and 1810 there were only 2 [8].

Dr C. Glen King of Columbia University began his review on "the discovery and chemistry of vitamin C" by expressing his interest in the intriguing problem of whether the loss of one or more genes that permit biological synthesis of the antiscorbutic vitamin, without disrupting other structures essential to survival, occurs only once or more often in nature. "Do men and other surviving primates share this unique property with the guinea pig in the process of evolution?" He continued by suggesting that by all historic rights vitamin C should have been vitamin A and vice versa. Despite Budd's clear suggestion in 1840 [8] that chemists would soon isolate the antiscorbutic substance from natural products and the excellence of the work of Zilva [9] in 1918, Bessezenoff [10] in 1921 and Vedder [11] in 1920 it was not until 1932 that the characterization of Vitamin C as a crystalline substance was achieved [12, 13, 14]. After this rapid progress was made in establishing the molecular structure of the vitamin which was completed by Hirst *et al.* [15] and in its synthesis by Reichstein *et al.* [16] and by Haworth *et al.* [17], the name "ascorbic acid" given it by Szent-Gyorgyi and Haworth [18] became accepted universally. Reichstein's later method [19] made possible its com

[illegible] from [illegible] (ketone [illegible]

After [illegible] the [illegible] by the [illegible] the British Surgeon Vice Admiral Sir Alexander Ingleby Mant[illegible] Medical Director General of the Navy who gave a brief review of [illegible] in a naval surgeon in the ship *Salisbury* He recounted the hardships of these times at sea and gave an example of the experiences during Anson's voyage of 1740–44 [20] in which over half of the *Centurion*'s complement died of scurvy He then gave an account of James Lind's first investigation on board the *Salisbury* [4] It was as a result of Lind's work that when Earl Spencer as First Lord of the Admiralty visited Haslar in 1797 he found not a single patient with scurvy where about thirty years previously one patient in every five suffered from this disease Sir Alexander ended by stating that we owe to Lind as much saving of human life as probably to any other man except perhaps the discoverer of vaccination

Professor Krebs gave an account of the Sheffield Experiment which was carried out from 1944 to 1946 at the Sorby Research Institute [21] Healthy human adults (10 male and 1 female) received a diet considered to provide with the exception of vitamin C all aliments and nutrients (including the flavanoids) necessary for their metabolic expenditure After a preliminary six week control period during which a 70 mg daily supplement was given the subjects were divided into three groups 10 received the basal diet only yielding less than 1 mg ascorbic acid daily 7 received 10–11 mg vitamin C daily and the remaining 3 received 70 mg daily Neither the subjects nor their physicians knew to which group they belonged

Professor Krebs summarized his findings of the vitamin C content of the blood plasma (by an indophenol method [22]) and of the white cells (by Butler and Cushman's technique [23]) in the following table

TABLE I —THE VITAMIN C CONTENT OF PLASMA AND WHITE CELLS IN RELATION TO INTAKE OF VITAMIN C AND THE SIGNS OF DEFICIENCY

Vitamin C intake additional to about 1 mg in basal diet mg daily	*No of subjects*	*Duration of dose Days*	*Average vitamin C content of*		*Signs of deficiency*
			Plasma mg /100 ml	*White cells mg /100 g*	
0	10	705–769	0 03	1 01	Haemorrhagic follicultus
5	3	145	0 05	1 0	Follicultis only
10	6	101–157	0 10	1 7	None
20	3	87 95	0 10	3 6	None
30	2	61 86	0 31	8 6	None
70	3	300 330	0 58	10 0	None
600	15	8–13	1 02	17 0	None

Professor Krebs ended by stating that in his opinion the main facts relevant to the assessment of the requirement of vitamin C are as follows (1) A supplement of 10 mg ascorbic acid cured clinical scurvy in all six cases examined

(b) a supplement of 10 mg ascorbic acid protected 7 subjects from scurvy which in the case of 3 of them stimulated over a period of 3 weeks (c) when a 10 mg supplement was withdrawn from 3 subjects after 28 weeks followed by a period of 28 weeks on intakes of 3·2 3·2 and 4·7 mg ascorbic acid daily no definite signs of scurvy (i.e. no haemorrhages) appeared and (d) the first signs of scurvy will develop in 17 to 24 weeks on a diet of less than 1 mg ascorbic acid daily

Dr M van Eekelen then gave a short address on the Occurrence of Vitamin C in Foods. He stressed that the amount of vitamin C present in foodstuffs depends on (a) the agricultural husbandry i.e. the way it is grown (b) its storage and (c) its processing in cooking prior to being eaten [24 25] Even in uncooked foods in addition to the first two very wide differences may arise due to seasonal effects [26] He briefly mentioned that although lemon juice contains plenty of vitamin C there were many better sources available particularly the hips of *Rosa canadica* [27] which contains about 7 000 mg per 100 grammes or 7 per cent but he suggested that if the requirement of vitamin C was about 10 mg daily then there was little need to estimate it to a high degree of accuracy in the foodstuffs since adults with a civilized mixed diet would all receive an adequate intake This would not however be so for children The vitamin C in Utrecht mother's milk varied between 0·8 to 3·5 mg per cent in May (weighted average 1·8 mg per cent) and 4·1 to 6·8 mg per cent in August (giving a weighted average of 5·1 mg per cent) so that the babies intake would be about 10 to 30 mg daily and their requirement would be met most adequately Some babies have to subsist on unsupplemented cow's milk averaging about 2 mg per cent pasteurizing this reduces its vitamin C content to 1·5 mg per cent the mother boils it on its arrival at her home (1 mg per cent) and warms it up before giving it to the baby (0·5 to 0·8 mg per cent) In the Low Countries it is sometimes necessary for milk to be transported over a great distance it may have been pasteurized twice therefore once in the farm district and once in the cities When it finally reaches the baby it may contain very little or no vitamin C at all it is under these conditions that infantile scurvy predominates as an evil of civilization

Professor Svirbely then spoke on The Impact of Vitamin Research on the Practice of Medicine He stressed that in spite of wide species differences all vitamins are constituents of and probably the active functions of the enzyme systems necessary to all vital processes He gave a brief historical survey of our knowledge of all the vitamins from early Chinese and ancient Egyptian times to the present day He drew attention to the obscure biochemical functions of vitamin C and noted its strong reducing powers and its importance in many hydrogen transfer systems In addition to its unexplained role in maintaining the integrity of the intercellular substances it evidently had an important action in hemopoiesis and in the reaction of the body to stress

With the title of Ascorbic Acid Deficiency in Experimental and Surgical Patients Dr J H Crumbine described his own work on the role of vitamin C in surgery [28] which is now as well known as Lind's His investigation had shown that clinical scurvy is not the result of ascorbic acid deficiency alone,

[illegible] patients [illegible] half [illegible] Boston City Hospital. All [illegible] and [illegible] very low [illegible] plasma [illegible]. During the same period [illegible] surgical cases [illegible] in either "buffy coat" or plasma and [illegible] showed [illegible]. When these patients were subjected to local tissue stress in the [illegible], the results were indicative of their poor physical state. He suggested that a plasma ascorbic acid level of below 0.2 mg. per 100 ml. is a reasonable index of deficiency. Operative and post-operative results on patients with an initial plasma ascorbic acid level of more than 0.2 mg. do not differ [illegible] with saturated levels. Dr. [illegible] ended by mentioning that it had been found possible to reduce artificially the "buffy coat" ascorbic acid level without affecting the plasma by feeding a high tyrosine (5 grammes daily) vitamin C-free diet.

TABLE II.—SURGICAL PATIENTS WITH NO ASCORBIC ACID IN THEIR BLOOD ("BUFFY COAT") BUT WITHOUT MANIFESTATIONS OF [illegible]

Total of 1,158 subjects	19
Followed up	16
Subjected to laparotomy	8
Eviscerated between [illegible] post-operative [illegible]	4
Persistent draining sinus [illegible]	1
Dead within two years	9

TABLE III.—SURGICAL PATIENTS WITH [illegible] (PLASMA [illegible]) ASCORBIC ACID AT OPERATION (NOT INCLUDING ANY PATIENTS [illegible] TABLE II)

Total of 1,158 subjects		21
Followed up		18
[illegible] wound complications		12
Laparotomy		13
Eviscerated	1	
Massive bleeding [illegible]	1	
Delayed [illegible]	[illegible]	
Incisional hernia developed	3	
Persistent draining sinus	[illegible]	
	9	
[illegible] amputation or [illegible]		[illegible]
Poor [illegible] healing	2	
Draining sinus lasting two years	1	
Of 18, [illegible] dead within [illegible] years		11

Dr. Robert M. [illegible], in discussing the relationship between scurvy, ACTH and surgery, said that in three [illegible] U.S. Service personnel there has been no suggestion of an increased requirement of vitamin C, but suggested that a [illegible] diet might hasten the onset of scurvy. He showed that ACTH causes a rise in the excretion of ascorbic acid in saturated subjects and that cortisone will act similarly but without disturbing the balance of vitamin C.

Professor E J Bigwood Dr C P Stewart and [illegible] speakers discussed the chemistry and synthesis of ascorbic acid and the histology of scurvy

Dr L J Harris as Chairman of the closing session expressed the feelings of all members when he regretted that there was only one hour available for discussion of the many interesting scientific papers

He suggested that he would like to hear three purposeful problems discussed (i) the requirements of vitamin C in man (ii) the reasons for the wide range of concentrations of ascorbic acid in animal and plant tissues and (iii) the problem of the biochemical actions of ascorbic acid Professor Krug in justifying a 75 mg intake for human beings apparently found no difficulty in extrapolating from the beneficial effects of supra optimal intakes of ascorbic acid on the reactions of lethal doses of diphtheria toxin in guinea-pigs to the national requirements of man Professor Krebs reaffirmed the main result of the Sheffield Experiment that 10 mg of ascorbic acid daily would prevent or cure scurvy in the human adult He was supported in these views by Sir Sheldon Dudley who had stated that as a result of numerous dietary studies he doubted if there were any members of the R N who had received more than 15 mg ascorbic acid daily for many years and that he had not heard of a case of scurvy in the Royal Navy during modern times In spite of Dr Harris's wishes no solution was found to the three problems

The Bicentenary celebrations closed after an ascorbic rich dinner enlivened by speeches in one of which Surgeon Rear Admiral J Hamilton C B E Q H S the present holder of the office previously held by Lind at Haslar replied to the toast—James Lind

We have to thank Dr C P Stewart for the abstract of Sir Sheldon Dudley's address and Surgeon Lieutenant Commander B Geoghegan for notes abstracts and bibliography

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HASLAR BICENTENARY

The bicentenary of the opening of the hospital was marked by the unveiling of a bronze plaque bearing the words "This plaque was unveiled by the Hon. J. P. L. Thomas, M.P., on Friday, 26th June, 1953, to mark the occasion of the bicentenary of the Royal Hospital, Haslar, 1753–1953." The plaque is fixed on the front of the main building to the right of the entrance in the arcade.

The Medical Director General, Surgeon Vice-Admiral Sir Alexander Ingleby Mackenzie, *K.B.E., C.B., Q.H.P.*, introduced the First Lord who was accompanied by the Commander-in-Chief, Portsmouth, Admiral Sir John Edelsten, *G.C.B., G.B.E., D.S.O., C.B.E.*

The assembly of some six hundred guests included senior officers of the Portsmouth Command and many past and present medical and dental officers and their wives. After the unveiling ceremony the guests were entertained at a garden party given by the Medical Officer-in-Charge, Surgeon Rear-Admiral J. Hamilton, *C.B.E., Q.H.S.*, and Mrs. Hamilton and officers of the hospital.

Contributed by "Dr. Barnadin"

Anyone can sympathise with the sufferings of a friend, but it requires a very fine nature to sympathise with a friend's success.—OSCAR WILDE

HOT LIVING

BY

Constructor Commander E. A. BROKENSHA, R.C.N.C.

INTRODUCTION

I – LIVING IN HOT PLACES

A hot vessel

Your Body

The human body is a thermodynamic machine which generates heat chemically and mechanically during its normal functions. This heat must be rejected if the body is to continue working. The rejection of heat is mainly done through your skin. A motor generates heat in its engine and rejects heat via the radiator. Seal off the radiator and the engine will blow up. Your skin is your radiator and gets rid of heat by conduction, convection and evaporation. This last, sweating, is the most important.

In hot climates the blood vessels under your skin dilate and more blood is circulated there. Also water is passed to the surface of the skin by the

sweat glands and its evaporation should keep the skin at the necessary temperature for good health. If these measures are insufficient your body temperature (normally about 99 degrees F) will rise: the diversion of blood to the skin will be stepped up: the rate of blood circulation will increase as shown by the increased pulse rate: and if the balance of heat generation and rejection is not achieved you will collapse.

The main concern of these notes is with skin cooling.

This is best achieved by circulating cool dry air over as much of your skin as possible.

The skin temperature is about 97° F. If you sit stripped to the waist and quite motionless in a temperature of 94° F. dry bulb 83° wet bulb (hereinafter set down as 95/83) and in an air circulation of 100 feet per minute you will be just comfortable. Hot yes but your skin will not be more than moist. At these conditions you will just be able to sleep soundly completely stripped on a hard mattress. Your heat generation will be equal to your heat rejection and your rate of sweating will be about one quarter of a pint per hour.

If you sit quite motionless you will be quite comfortable.

These conditions should be possible in a normal mess deck in typical tropical conditions during the hottest months if the ventilation is designed correctly and is properly run. *See* Part II.

How to Keep on Living

The following notes may be helpful to you —

(1) Even when doing a very hot job for most of the day it is possible to keep fit in the tropics by sleeping cool.

(2) There is still no known cure for prickly heat except by spending at least half your time not sweating freely. The man who sleeps cool in the upper

deck have the best chance of avoiding it. There is no reliable evidence from the tropics that sleeping in an air current with the body uncovered causes any tummy trouble. It certainly cures prickly heat. This statement may cause some argument, but the emphasis is on tropics and reliable evidence. There is plenty of evidence that tummy trouble is directly related to contaminated food and drink.

(3) Never, never, never sleep on the upper deck in the tropics during the day. Sleeping in the sun is a common cause of heat stroke.

(4) Drink enough water to enable you to pass one pint each day. This may mean you have to drink up to four pints an hour while you are in hot machinery spaces. The world record is a man's sweat rate of nearly a gallon in one hour. If you don't drink enough water you are exposing yourself to the risk of kidney trouble if not soon, at least in later years.

(*Note.*—It is difficult to drink large quantities of cold water. Warm water is unpalatable to some, but is easier to drink in large amounts.)

A sip is unpalatable to some.

Fresh water consumption in a warship should not be greater than 25 gallons per man per day for all purposes including drinking. A higher consumption indicates that water is being wasted. Rationing tends to defeat its own object by encouraging waste during the periods that the water is turned on. Location of the ship's company is far better and should be tried without rationing. Drinking water *must* be available at all times. In small ships it is easier to produce a good spirit (and to catch the offenders). I have known a destroyer to get down to 14 gallons per man per day without rationing until [illegible] the hottest tropical weather. (This was made up: Cooking and drinking 3 gallons, personal washing, 6 gallons, dhobying 2 gallons, mess deck cleaning, 2 gallons.)

(5) Take plenty of salt with your meals. When your body is short of salt you will find large quantities of salt in the almost tasteless. Much sweating with a small salt intake can cause collapse.

(6) Skin troubles are common in the tropics and, once started can quickly become serious and reach a stage where cure is extremely difficult. At the first sign of itching between the toes, soreness under the crutch or armpits, watery blisters on the feet or any unusual rash, show it to your medical officer. Don't wait even one day.

II.—Some Places are Hotter than they Need Be.

The following is to encourage your interest in research on those living compartments in your ship which exceed the conditions described in Part I as "just comfortable."

Temperature

The *dry bulb* temperature is the temperature of the air as registered by a thermometer the bulb of which is dry and is shielded from radiation.

The *wet bulb* temperature is the temperature of the air as registered by a thermometer the bulb of which is wetted with pure water which is shielded from radiation and exposed to a high velocity flow of air (not less than 600 feet per minute).

The whirling psychrometer Pattern 90 is used to record these temperatures. This consists of a wooden frame in which are mounted two thermometers, one of which has a wetted wick over the bulb. The wooden frame is mounted on a spindle fitted with a handle and the instrument is used by twirling it like a rattle for thirty seconds before each reading.

Note

(1) Take outside readings in the shade. Your own body shadow will do. Stand well to windward of any source of heat from the ship.

(2) Make sure the wick is moist with distilled water. Salt water will not do.

(3) Twirl and read and repeat until you have reached steady temperatures.

(4) Watch when you twirl. Knocking the instrument on a hammock bin is not recommended.

(5) For temperatures of air at punkah louvres hold the bulbs in the air flow at the louvre opening. There is no need to twirl in this case.

(6) Do not finger the wick.

Dry bulb temperatures alone are useless. Use the Pattern 90 and make sure the readings are accurate.

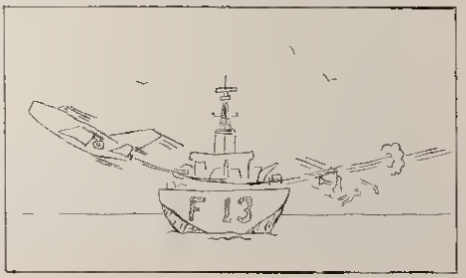
Some readings received from ships are still taken from thermometers mounted in black metal cases. These register a high proportion of radiation and the resulting readings are valueless. Similarly the readings from any wet bulb thermometer are useless unless there is a strong current of air moving over the bulb. (The Stevenson Screen is usually inaccurate on this account.)

"Watch where you're going!"

The Globe Thermometer has its bulb enclosed in a black sphere. It is used to record radiation and if its reading is used together with the dry bulb reading taken by the Eutherm 90 the radiation chart can be isolated and evaluated. These globe thermometers are essential for simple investigations.

Movement

With air at a given temperature the cooling effect on the skin can be increased by air movement. Measurement is by vane anemometer, velometer or the Eutatherm-ometer. These instruments will not usually be readily



Higher velocities will annoy you

[illegible] The kata thermometer is a thermometer which is heated by the cooling used gives a rate of cooling index derived from the time taken to cool The velocity of air circulation may then be obtained from tables In my opinion its value is over rated

As a guide an air velocity of 100 feet per minute will move a sheet of foolscap from a table or extinguish a lighted match immediately the head is turned 600 feet per minute will cause some discomfort to your eyes and will blind your eyelashes Higher velocities than this will annoy you considerably without cooling you more You may experience this in some positions in an engine room or boiler room

Effective temperature is an empirical index which combines in one temperature the effects of dry bulb wet bulb and air velocity readings It is valueless as a pointer to faults of design in operation of equipment for which the separate components are required

Corrected effective temperature is similar but depends on the globe thermometer reading Not to worry You shouldn't need it

Humidity

It isn't the heat—it's the humidity has been said before, and I would be eternally grateful if its repetition could be made a punishable offence

Relative humidity is the ratio of moisture actually in the air to what the air could carry if saturated at the same dry bulb temperature

Relative humidity is of some use for gauging the cooling effect of air but it has little value in investigations other than for research on condensation If air is heated the relative humidity will decrease This makes comparisons of humidity difficult

Absolute humidity is the amount of moisture contained in a fixed weight of dry air (usually expressed in grains per lb of dry air) and is of invaluable assistance in tracing ventilation faults See later

A Typical Investigation

If you have to investigate conditions in any compartment of your ship the following might be of service It is no exaggeration to say that *every ship in the Fleet has at least one out of every ten of its living spaces where an immediate noticeable improvement can be made at once* by some means In such cases an experienced investigator can usually find a simple remedy without instruments With the aid of a psychrometer and a pitot tube (*see* later) and a little thought it is money for old rope

If you are still with me I suggest that you resolve here and now to have a shot at this game which has a unique fascination and some tangible rewards

Even if a simple remedy is not on the results of the investigation will establish the need for any improvement and usually indicate the best method of tackling the job as an alteration and addition (If more supply fan power is required for example there is little to be gained by lagging only and your readings will show the right road)

Preliminaries

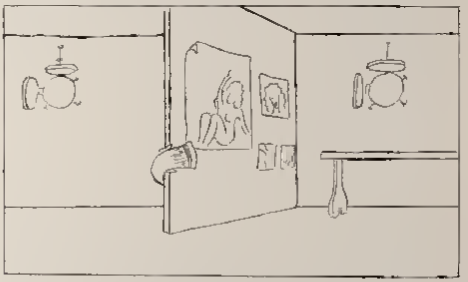
What the [illegible] the feel of the [illegible] If you [illegible] from a hot [illegible] will be more [illegible] stay there for [illegible] minutes [illegible] whatever [illegible] do tell the [illegible] the place [illegible] Say how [illegible] is important. One particularly [illegible] is feeling [illegible] choking in the air. Just ask questions and observe.

Are the men stripped to the waist? Are any suffering from boils or prickly heat? Is their skin moist or is the sweat rolling down the skin? Do any men *not* use hammocks because it is too hot to do so? Do any men sleep elsewhere because of the heat although room is available in the mess? What chances have the men to sleep on the weather decks? What jobs do the men do?

The answers to these questions will determine broadly the nature of the conditions without recourse to instrumental readings.

Next make a rough sketch of the mess and note what the surrounding compartments are. Where there is a source of heat on the other side of the bulkhead or deck note whether the boundary is lagged. Feel the surfaces of the boundaries inside the mess. Isolated unlagged portions are relatively unimportant provided their temperature is less than 150°.

The mean temperature over the whole area is the important factor. Incidentally, 150° is just bearable to the hand. 140 will leave a mark on your arm. 130 will be just bearable to the arm. 120 is the temperature of a very hot bath and anything between 110 and 95 will feel just warm.



A source of heat on the other side of the bulkhead

Don't assume the lagging is inefficient because there is a temperature drop between the outside and the mess side. It may well be that the mess is hot for some other reason and that there is thus no heat flow nor temperature gradient through the lagging. (Many applications for awnings over lagged decks are due to this state of affairs.)

Note the position of the supply trunking and the number location and type of punkah louvres on your [illegible] (The number of punkah louvre is twice its outlet diameter in [illegible] the flow from each punkah louvre with your hand Do not assume the supply [illegible] is equal but must check this by the hand That air at high velocity [illegible] to the [illegible] at the [illegible] kan

Find the supply fan motor [illegible] Then it is running at full speed Fans run at 1440 and 720 inch rough speed Other have two or more speeds

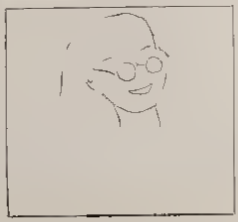
Ship fans are will able to run at full speed and will do it under the following conditions —

(1) Good fan maintenance

(2) The delivery air outlet must not be closed whilst the fan is running (Most mess deck trunking has relief valves on top which lift when the punkah louvres are closed thereby continuing the ventilation of the mess and saving the fan Relief valves which stick open are a source of trouble in hot climates They are tucked away on top of the trunking and usually take some finding— size of case about 9" x 6" x 1")

(3) Fans must never be encased in airtight boxes This sometimes happens in enclosed mess decks The draping of overalls towels or oilskins on fans must

Mike Cat



clear of suction and fluff

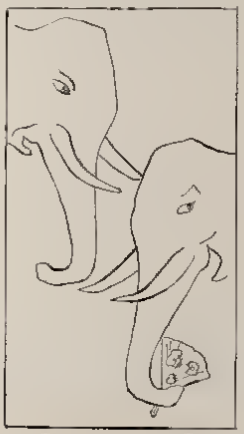
[illegible] It is important to see that the air vents of the fan motors [illegible] which the cooling air for the motor is circulated are clear of paint and dirt and that inspection covers are in place—their absence will sometimes cause cooling air to by pass the motor

It is the bitter experience of some ships that on entering the tropics and setting fans to full speed there is an immediate and alarming crop of failures resulting in the order Fans are to be run at half speed only It is inevitable that any defective fans will fall down in a body when run at full speed, but *given good maintenance* fans *will* give good performance at full speed

Check that the fan is running forwards Strange to relate, a centrifugal fan will still deliver air in the right places even when running backwards and hundreds were so fitted during the war Regrettably they only deliver half their rated output that way ! (A centrifugal fan should run in the direction that would best sling pebbles into the outlet if there were any pebbles in the fan casing)

Look for holes in the trunking inspection covers missing or misplaced, or flaps set wrongly (particularly on the intake side of the fan)

"A trunk without a fan"



"Rarely a fan is fitted"

Locate the supply trunking outside the [illegible] and [illegible] the inlet. Is the inlet sited in the open air? (Some I have seen were sited in [illegible].) Is the waterlight flap open?

Search for the exhaust in the mess. Sometimes exhaust is via the door sometimes there is a trunk without a fan. Rarely (in mess decks at least) is an exhaust fan fitted.

Only on very rare occasions will additional exhaust make any difference to a mess deck. The rule is: Deliver cool air by fan to the mess and exhaust hot air by fan from the equipment. If additional fan power is required in a mess supply will warm hands down.

Scuttles will affect temperature only on the rare occasions when they are open and the wind blows in. Practically they can be neglected but their psychological effect is considerable.

Investigation Using Instruments

See B R 1472 A T O 2587/51 and Form S 1120.

Temperatures

Take dry bulb and wet bulb temperatures at —

(*a*) Outside in open air (to windward in shade)

(*b*) At weather deck intake to supply fan

(*c*) At punkah louvres

(*d*) At exhaust terminal in mess

(*e*) At exhaust outlet on weather deck.

If necessary take surface temperatures on each side of bulkheads and decks. Fix a thermometer to the boundary with bulb touching the steel and the stem supported by sticking plaster. Place a small piece of sealing compound or plasticene over the bulb to shield it from the air in the compartment and leave for 5 minutes. This is not a strictly accurate method but nearly so.

Quantity of Air Supply

It is not possible to do much about this unless the correct instruments are available but much can be done with a simple pitot tube. This consists of a glass U tube mounted on a piece of plywood (about 6" x 2" will do nicely) with one limb of the tube connected by rubber tubing to a small gauge copper tube about one foot long.

Put a little water in the U tube and measure the static pressure in the ventilation trunk at each punkah louvre by poking the free end of the copper tube well into the mouth of the louvre and keeping the tubing at right angles to the air flow in the trunk. Record the difference in levels of the water in the U tube and consult the table in the appendix to this paper for the punkah louvre output. This surprisingly is a sound method if the measurement of difference of levels in the U tube is accurate.

By removing convenient screws in the trunking and inserting the copper tube into the holes it is possible to get static pressure all along the trunking from the deck inlet to the first punkah louvre. The pressure drops will indicate

if there are any obstructions in the trunk. Many a seaman's jumper has been restored to its owner by this method. Muslin or gauze covers must never be used on punkah louvres. True the supply ventilation will spit dirt at you but ordinarily in very small quantities, in spite of the dirty streaks that you will see near any vent opening. When a fan is run at full speed very little dirt can lodge in the trunking, the air velocity of 2,000 feet per minute being sufficient to keep it moving, particularly if your ship uses its guns occasionally. *But* if gauzes over the punkah louvres become choked quickly and the air velocity in the trunk will fall to a figure at which dirt can lodge. (A slow running river will deposit its silt.) Once this has happened the removal of the gauzes will be followed by a deluge of dirt and if clean gauzes are replaced they will choke in one hour. The only methods I know to clean trunking which has become very dirty are —

(*a*) By removing inspection covers or sections of trunking and playing 'chimney sweeps.' Very ineffective unless trunking can be taken down. Dockyards won't play as a rule and the resulting dirt in the ship is worse than if cleaning had not been attempted.

(*b*) Compressed air. Might be effective if hoses can be buttoned to punkah louvres and led through scuttles so that dirt goes outboard. You can try it but you will soon get tired.

(*c*) Clear the compartment supplied, packing away all clothing, bedding and any curtains or covers. Open all punkah louvres, turn on fan to full speed and wallop the trunking with your fist or the bristled head of a broom. Or better still, do this during a spell of guinea. Then clean up the compartment. This is probably the best practicable method.

(*d*) By vacuum cleaner. *See* last sentence of (*b*) above.

Analysis of Temperature Results

B.R. 1472 contains detailed descriptions of instruments and charts for the evaluation of air qualities. Failing this approximate evaluation can be done by reference to Appendix III.

From the dry and wet bulb temperatures obtained establish the absolute humidity for each reading taken. Do not mean any readings before evaluation. (Term R.H. 120 indicates some meaning but only for economy of space.)

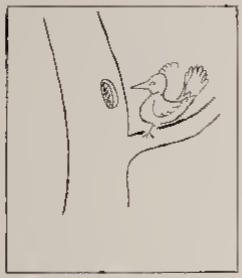
A typical evaluation for a mess deck is as follows —

Position	*Dry bulb/wet bulb degrees F*	*Absolute Humidity grains per lb*
On forecastle to windward in shade	82/71	96
(*a*) At deck intake	88/74	110
(*b*) At No. 1 punkah louvre	94/84	163
At No. 11 punkah louvre	94/84	163
In compartment		
Position A	98/87	178
Position B	98/86	174
At exhaust in compartment	100/89	192
At exhaust on deck	104/89	192

Notes

(*a*) The humidity is 11 [illegible] than in open air. With [illegible] experience an initial error can be kept less than [illegible]. This gain [illegible] fouling is present but the gain is typical and it is unlikely [illegible] a better place for the intake can be found. If the gain were [illegible] research into causes would probably suggest a better position for the intake or for an adjacent hot exhaust which is causing the trouble. A quick remedy can seldom be found and an alteration and addition is usually required in bad cases. Aircraft carriers are full of such cases, particularly when blackout screens are rigged.

(*b*) Now here's something! Considerable moisture added to the air between one end of the trunk and the other. It is certain that a hole exists in the trunk between deck intake and fan.



It is certain that a hole exists in the trunk

Look for —

(i) Split trunking
(ii) Corroded trunking (especially at fan eye)
(iii) Missing inspection covers
(iv) Open gas flaps

and a quick answer to the problem will be found. Putting this right will bring temperatures in the mess down to about 90/77 which would be good.

The rest of the readings in this example show normal gains. Even if the exhaust were to exhibit something unusual it would be of little interest for habitability of the mess deck.

Without writing at unacceptable length this type of analysis cannot be further detailed but once the gains are known the rest is simple thinking. Try it.

[illegible]

[illegible] given in the Appendix

How Much Ventilation Is Needed?

[illegible] first per minute per man in hot climates [illegible] This is desirable to limit the spread of heat in

In cope with the heat from man equipment hot decks and hulkheads a rough guide is as follows —

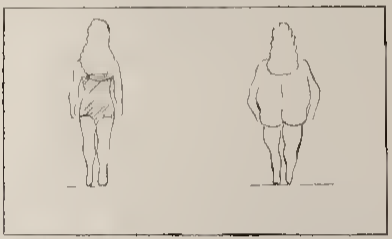
(*a*) Multiply the total number of men accommodated by 10

(*b*) Find the total number of kilowatts of any machinery in the mess and multiply by 150

(*c*) Find the area in square feet of lagged decks and lagged bulkheads separating the mess from hot spaces Include boundaries exposed to sun and [illegible] of hot trunking passing through the mess

Add (*a*) (*b*) and (*c*) The answer is the ventilation requirement (in cubic feet per minute) to control mess temperature.

If any of the boundaries exposed to heat are unlagged the approximate figure in (*c*) above should be multiplied by 2



If [illegible] are unlagged the area should be multiplied by two

Note — This is *very* rough and is meant for guidance *not* as a basis for any [illegible] alterations and additions

It will often be found that the air supply is low but it is unlikely that an alteration and addition will be considered by Admiralty unless the fan power at full speed needs to be at least doubled on the above basis

Punkah Louvres

Where head room permits it is usually better that louvres should be sited on the underside of ventilation trunking

The air jet from a punkah louvre should be capable of being directed on to seats, mess stools bunks and hammocks The air movement at these positions

should be 100 feet per minute [illegible] occupied positions However after [illegible] working efficiently further improvement can often [illegible] louvres

Hot Equipment

Switch off when not in use but electrical [illegible] energised to protect them from the damp Don't waste [illegible] switching off lights and introduce unnecessary gloom It is not worth [illegible] man at rest generates 180 watts and the temperature gain by switching off lights cannot be measured

Air Conditioning

The main function of air conditioning is air cooling by passing [illegible] coils During its passage through the cooler the air will [illegible] and subsequently will reach the air conditioned compartment with [illegible] dry and wet bulb temperatures

With outside conditions of 88 80 air conditioning should be [illegible] action compartments and 85 73 for living compartments

There are two main types as far as the users are concerned —

(*a*) Normal ventilation and air circulation under [illegible]

(*b*) Cooled air supply to the compartment

For (*a*) most of the punkah louvres should be [illegible] For (*b*) the air conditioning duct should be set at the minimum [illegible] and the fan run at slow speed when the cooler is [illegible]

All doors and scuttles should be kept closed and smoking prohibited in air conditioned compartments

Fresh air supply is essential when the cooler is running but the exhaust air from the cooled compartment gradually loses cool and [illegible] and it is more efficient to conduct further [illegible] The recommended quantity is 10 ft³ minute per man of fresh air is the minimum supply for good hygiene but this amount will not deal with tobacco smoke

APPENDIX

I —*Outputs of Punkah Louvres*

Outlet gauge inches	Inlet Depth of orifice in inches			
	¼	½	¾	1
1·0	26	45	61	
0·9	38	1·5	85	
0·8	46	80	105	
0·4	54	97	1·01	
1·5	61	1·13	1·35	
0·6	[illegible]	0·0	65	
0·7	61	0·0	0·0	
0·8	71	0·91	1·10	
0·1	81	1·34	1·8	
1·0	86	148	190	

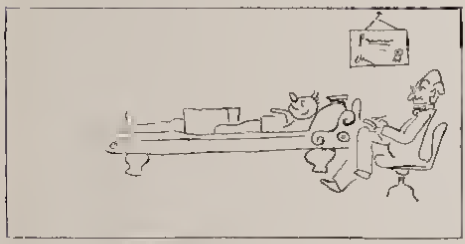
II —*[illegible]* (Full [illegible])

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	9	750 [illegible] W
[illegible]	16	1 300 [illegible] W
[illegible]	16	2 000 [illegible] W
[illegible]	19–21	4 000 [illegible] W

III —*[illegible]* *Table* (Interpolate as necessary)

Dry bulb	*Wet bulb*	*Absolute [illegible]*
120	100	268
	95	215
	90	168
	85	126
	80	89
115	100	277
	95	224
	90	176
	85	135
	80	98
	75	67
110	95	232
	90	185
	85	143
	80	106
	75	73
	70	46
105	90	194
	85	152
	80	115
	75	82
	70	54
	65	28
100	90	220
	85	160
	80	124
	75	90
	70	62
	65	36
95	90	212
	85	169
	80	132
	75	99
	70	71
	65	44

90	85	17
	80	146
	75	108
	70	79
	65	53
	60	29
85	80	150
	75	116
	70	87
	65	61
	60	37
80	75	129
	70	95
	65	68
	60	46
	55	25
75	70	104
	65	78
	60	54
	55	33
70	65	86
	60	62
	55	40



[illegible] the psychrometric table

EPIDEMIC INFECTION OF THE GASTRO-INTESTINAL TRACT OCCURRING IN A PASSENGER SHIP

BY

Surgeon Commander W S PARKER R N V R

(Formerly Surgeon Merchant N V R)

ILLNESS IN LIGHT RETROSPECT

Many passengers on the liner which berthed in Melbourne in the [illegible] English complained of stomach trouble during the voyage. Some seemed more severely affected. It was reported that 70 cabins developed illness of [illegible] severity, and in the end [illegible] over 100 passengers [illegible] five days sent a petition to the [illegible] asking for [illegible] [illegible] *Brit. J. Surg.* 1941

A REGRETTABLE but common feature of life in closed communities is — epidemic and [illegible] outbreaks of enteritis or gastro-enteritis occur [illegible] in [illegible] asylums, barracks, [illegible] and other similar groups.

Passenger ships — in long voyages are [illegible] closed communities which [illegible] to similar outbreaks. As no outbreak is usually under control before the ship arrives at her destination the Port Health authorities have no [illegible] to investigate the matter further. The clinical material is old and unwilling, the data is often insufficient and the community breaks up as the ship berths. It is very rarely that there is any publicity.

In some ways a ship at sea makes an ideal experimental group. The crew have free medical attention and given confidence in their medical officer will report sick early, especially with a little advance propaganda. The passengers bored with their enforced idleness eagerly seek a new topic for complaint. In fact there is likely to be almost 100 per cent. accuracy in the number of cases recorded. All sources of food and routes of service are easily traced. All the same, unless thorough investigation is made at the outset [illegible] are lost due to the complexity of organization.

Epidemic intestinal disease presents gastric or enteric symptoms which may be acutely explosive or so mild as to be little more than a temporary embarrassment. Cases have been described in which the acute explosive vomiting, has caused immediate collapse. On the other hand I have attended patients who have had nothing but a repeated bowel action with only partial control and almost no warning.

Diagnosis is customary to attach an epidemic with a clear bacteriological picture [illegible]. As laboratory facilities are rare at sea the bacteriology is almost always a matter of speculation based on the clinical evidence. In fact the medical officer must adopt a rationalized version of the purely clinical practice of half a century ago and identify the bacterium or other causes from the symptoms observed.

Assuming that [illegible] of the disease [illegible] this
[illegible] classification [illegible] the speed with which [illegible]

If the virus is [illegible], when the [illegible] if there
is a delay [illegible] if symptoms [illegible] the virus [illegible] controls
so that a [illegible] the [illegible], the [illegible] virus [illegible]
[illegible] toxin should [illegible]

The cures [illegible] bacterial [illegible] other [illegible]
Their [illegible] the passage [illegible] the ingestion [illegible]
[illegible]

To [illegible] and [illegible] of the [illegible] the [illegible]
of the human [illegible] without [illegible] it [illegible] possible to [illegible]
[illegible]

The Ship [illegible] the [illegible] [illegible]
[illegible] by [illegible] [illegible] [illegible] [illegible]
material [illegible] [illegible] [illegible] [illegible]
stewards [illegible] [illegible] [illegible] [illegible]
officers [illegible] [illegible] [illegible] [illegible]
certificated Ships [illegible] [illegible] [illegible]
from [illegible] [illegible] [illegible] [illegible]
which [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
surrounding [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]
is [illegible] [illegible] [illegible] [illegible]
supplied [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

The [illegible] [illegible] [illegible] [illegible]
passenger [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
standing [illegible] [illegible] [illegible] [illegible]
them [illegible] [illegible] [illegible] [illegible]
ing to [illegible]

Provisions [illegible] [illegible] [illegible] [illegible]
common [illegible] [illegible] [illegible] [illegible]
The [illegible] [illegible] [illegible] [illegible]
proper [illegible] [illegible] [illegible] [illegible]
ships [illegible] [illegible] [illegible] [illegible]
gathered [illegible] [illegible] [illegible] [illegible]
but [illegible] [illegible] [illegible] [illegible]
point [illegible] [illegible] [illegible] [illegible]

nes cold and hot drinks [illegible] tion. It is here that they [illegible] the maximum handling [illegible] ering and to much transfer from one [illegible] to another

From here the food and [illegible] is distributed to the passengers and officers in the engineer officers (via [illegible] pantry) and to the stewards

Washing up is done in the pantries in the passenger accommodation the crew mess boys wash up in their messes There is no refuse problem as all waste and garbage is thrown overboard at once

Briefly then the ships [illegible] and the passengers officers and their attendants have separate sources of [illegible] food but a communal [illegible] and water supply there is no fresh milk on board except for a small stock of sterilized milk provided for infants

As gastro enteritis due to food poisoning is not a notifiable complaint to the Port Health Authority statistics are few All ships surgeons appear to be familiar with the condition and it appears to be accepted as a normal feature of ship board life Often the condition is maintained as endemic indeed so much is this so that the general attitude is one of resigned vigilance following upon an initial enthusiastic but unsuccessful attack on the first outbreak Unfortunately there is no concise and accurate account of the condition in which the clinical and bacteriological aspects of the question have been co ordinated with modern practice in public health and naval hygiene

The best descriptions available come from the published statistics of the United States Navy those have the benefit of accurate standardized reports accompanied by bacteriological investigations but the communal and disciplinary conditions are not analogous Royds Jones a British Merchant Navy Surgeon has written on the condition (1938) but the bacteriology takes second place to the hygiene and clinical angles He gives an excellent account of typical occurrences aboard a passenger ship

Royds Jones divides patients into three categories

(1) Sporadic cases among passengers and crew during a voyage usually on entering or leaving a hot and humid climate

(2) Sporadic cases caused by eating ashore

(3) Acute epidemics often affecting only a section of the community on board

In considering category (3) he describes three separate outbreaks in a modern large passenger ship in which he was the surgeon

In the first epidemic 87 cases occurred in one night they complained of diarrhœa and vomiting with temperatures of 102 103 F The patients were so ill that they fainted in lavatories and introduced the unusual complication of cuts of the head when they fell All recovered in three days The patients had all been served from first class galley many were fed from the crew galley or third class galley

The differential diagnosis of the cause was given by Royds Jones (1938) as

[illegible] by bacteria/[illegible]

(2) [illegible]

(3) [illegible] of water [illegible]

Lobsters were suspected and owing to [illegible] at Gibraltar stealing one of the lobsters sent in for investigation [illegible] inner party on the strength of it [illegible] people found themselves unfortunately used as guinea pigs and murdered a typical gastro-enteritis. Unfortunately no organism was isolated.

The second outbreak concerned 900 passengers who had gone on a shore excursion abroad and three quarters of whom were taken ill after a meal in a railway restaurant car. On this occasion there was no outbreak in the ship itself. There was a general condition of gastro-enteritis which cleared up in a day or two except in 3 cases who remained ill for a considerable period. These 3 cases were later investigated and *S. enteritidis* agglutination in a dilution of 1 in 10 was demonstrated and in the third with negative agglutination *S. enteritidis* was cultured from the feces. No other stool specimens appear to have been taken.

The third outbreak consisted of 49 officers, passengers and stewards all led from the first class galley. No member of the crew fell from the crew galley was affected. Again there was an acute gastro-enteritis—and again the only common food was lobster which had been boiled and allowed to cool off. No pathogenic organism was isolated from the cases but three lobsters similar to those suspected were shown to have *B. coli*, *B. proteus* and *B. lactis aerogenes* in their intestine after forty minutes boiling; three others were found to be sterile.

Royds Jones concludes that two out of the three outbreaks were due to consuming lobster. He considers that the intestinal canal of this crustacean is not sterilized by forty minutes of boiling and that the flesh may become infected from it during preparation for the table.

The following is an account of a similar outbreak which persisted in a large passenger steamship throughout the passage from Japan to Britain in the winter of 1946–7.

The ship with a crew of 300 and some 250 passengers as well as 1 800 troops travelled from Japan via Shanghai, Hong Kong, Singapore, Bombay and the Suez Canal to Southampton and so was exposed to a range of climate from the bitter cold of continental China to the extremes of equatorial heat in the forty day voyage.

Members of the steward staff reported with diarrhœa and a temperature of 100° F. on the day the ship sailed from Kure in Japan. For some days these had been frequenting cafés there which were clearly marked out as out-of-bounds by the Army owing to the prevalence of cholera, typhoid and other alimentary risks. It was assumed that owing to their foolhardy conduct they had been infected ashore and were accordingly stood off duty and given appropriate treatment (a saline purge and after one hour an hourly dose of a teaspoonful of kaolin powder with chlorodyne and sulphaguanidine). They were permitted

[illegible]

[illegible] reported next [illegible] immediately [illegible] threatening the [illegible] and [illegible] isolate the cause [illegible] before the [illegible] whelmed with [illegible] part of the world.

In investigating [illegible] the following [illegible] consideration. [illegible] water. These [illegible] therefore not suspect. [illegible] and issued foods [illegible] of the entrees [illegible] left the [illegible] food and the possible [illegible] contamination of utensils by washing [illegible] was not considered a factor as the engineer officers were aff[illegible] stewards and five of the passengers. Utensils were washed up [illegible] places so a common link was unlikely.

This left attention focused on the pantries where cooked [illegible]. Of necessity in catering for large numbers [illegible] hours beforehand. Some of the staff [illegible] of low intelligence and [illegible] and social in that it is difficult to [illegible] them in personal [illegible] hygienic methods of food handling [illegible] had a much [illegible] position a slice of meat or pudding [illegible] to the [illegible] or forks. A general tightening up still [illegible] followed into the [illegible] discipline [illegible] possible, the sequel may be a tightening [illegible]

Owing to the general lack of appreciation of the results of [illegible] measures and the impossibility of [illegible] the full [illegible] group of men who are in their present employment [illegible] visits to the community [illegible] This was achieved by removing the [illegible] them energetic treatment designed to stop the [illegible] with the routine measure of [illegible] wanted to go back to work, thus appealing to the really sick [illegible] too thankful for a chance to be up at the same time [illegible] duty attracted those who had the attitude that [illegible] and who would otherwise have [illegible] sick of those they attended. Possibly [illegible] to escape duty found that the [illegible] must [illegible] into practice but that the [illegible] of the [illegible] [illegible] rather much work [illegible] after the first [illegible]

The general point of [illegible] reduction from food handling [illegible] to the passengers (only [illegible] affected [illegible] ashore before joining) and to the [illegible] with them [illegible] and snacks sent up to the bridge [illegible] in the pantry [illegible])

No [illegible] investigations were made [illegible]

[illegible] Contents of [illegible] own quarters [illegible] ship hospital was [illegible] on passage or [illegible] which had [illegible] daily was provided [illegible]

The following [illegible] dealing with the problem [illegible]

(1) The ship had to continue [illegible] and daily routine

(2) Without [illegible] all steps had to be taken [illegible] the passengers

(A) Because they would have retired to their bunks and rightly expected to be given individual attention for which there was not staff available [illegible] stewards as they being already [illegible] (B) put about below strength [illegible]

(B) The ship would have run out of essential remedies

(C) Loss of reputation to the Shipping Company

(3) If the troops on board had been affected in the same way the military staff would have had a similar problem

(4) The surgeon and one attendant had their hands full with the normal medical load of the ship

(5) Early after quarantine from men of the equivalent of the *foreman* group who had spent many years at sea where a less energetic approach apparently had been usual among ships surgeons they would not expect sick themselves and would not encourage their juniors to do so Indeed I consider that [illegible] many years and have retained in many ways the biggest obstacle to a complete check of the outbreak in the first two weeks or so It meant that one could not rely on reconnaissances being carried out with any thoroughness

The diagnosis of this outbreak of food poisoning is here considered by the circumstances and the symptoms presented If the causes are placed in order of time of onset then they can be presented as follows

(a) Metallic poisoning Cadmium antimony and arsenic are possible risks Ehese conditions are not associated with pyrexia The onset is practically immediate in acute cases and presents a picture of violent irritation of the gastro intestinal tract which can persist over a period of days In addition epithelial cases [illegible] of haemolysis

(b) Staphylococcal or other toxins from the growth of the organism on some article of food contaminated from a septic finger or a boil The onset is often within an hour and there is an acute gastritis sometimes with an enteritis The temperature is not raised This is a single explosive incident unless a food handler with a septic finger or his hands remains undetected to contaminate other foods on another occasion (Another condition included here as due to ingested toxins is botulism This is not in illness with gastro intestinal symptoms but presents itself as a giant form of general or local paralysis due to the action of the virulent neurotropic exotoxin The onset is not immediate but the outcome is nearly always fatal within a week)

(c) Infection by salmonella organisms leads to [illegible] with pyrexia this arises some hours after the [illegible] The delay in onset is due to the multiplication of the [illegible] tract and according to the part with which the [illegible] the symptoms usually referred to the upper or to the lower part of the alimentary canal Frequently an outbreak of salmonellosis arises as a result of some single meal but the continued existence of the organisms depends on some reservoir of infection and this may be animal or human Infection of animal origin may spread from the intestinal canal of mice or from the product of hawks especially chicks Human spread is from the infected bowel by faecal contamination due to lack of elementary hygiene combined by a food handler

(d) Prim dysenteries can run a relatively mild course They have an incubation period of two to five days and present a gastro enteritis or more often an enteritis which is accompanied by a pyrexia It is to be noted that the types of dysentery vary in frequency and prevalence in different parts of the world. For instance Sonne dysentery is common in Europe but relatively infrequent in the Far East The spread is by faecal contamination from the infected human bowel The excreter may be symptomless and intermittent

(e) Typhoid or paratyphoid fever is a form of food poisoning in that it can be transmitted by faecal contamination of food The incubation period of some two weeks is so long that the mild bowel symptoms are unimportant and the general clinical picture is due to the organisms penetrating the bowel and causing a general systemic infection usually presenting itself at first as a pyrexia of unknown origin

From the above it would appear that the cases occurring during the voyage could have been due to either a variety of salmonella or a mild form of dysentery as the essential features were an enteritis with pyrexia In view of the persistence of the outbreak the infection must have been from some reservoir of infection which may well have been a human excreter who was employed in the handling of the food supplied from the first class galley The interesting point is that by standing off duty those food handlers who were clinically affected it was possible to keep the infection from the group of 240 passengers with only a few exceptions In the absence of any bacteriological information no accurate explanation of this success can be offered

In considering the origin of this infection the history is of extreme importance Of Royals lobster outbreaks one had no connexion with the ship and could be traced with accuracy to the meal served on the shore visit The other two incidents were single and explosive and lobster was suspect The patients had a pyrexia As no further cases arise the outbreaks must be considered as due to food which was not contaminated by a food handler

It appears to have been due to an inoculation of the organisms lying in the intestinal tract of the lobsters which remained unaffected by the partial boiling These organisms would spread and flourish as the temperature of the lobster flesh dropped to a suitable incubation level

On the other hand my own cases persisted for a period of weeks This

means that various [illegible] possible [illegible] that these several [illegible] infective [illegible] handling The only [illegible] from soil [illegible] source during prep[illegible] has to be [illegible] in order to prevent [illegible] reservoir of infection [illegible] bowel of a human [illegible] symptoms or alternate [illegible] mice or rats in this instance [illegible] the ship's [illegible] rodents Salmonella organisms [illegible] on the human bowel for weeks or months after an infection [illegible] been so slight that it could be forgotten or ignored [illegible] in a food handler is an inherent risk to any community [illegible] is to be provided There are no certain tests other than stool [illegible] and these may have to be repeated in order to deal with [illegible] of intermittent excretion On the other hand these [illegible] feel while they maintain elementary rules of hygiene and [illegible] from urination or defaecation and also on all occasions when [illegible] during meal times being away for any other reason

It is to be noted that this outbreak differs from those of Royds Jones in that his were explosive single infections whereas my personal cases were of a persistent endemic condition which was prevented from becoming epidemic among the passengers by striking at the focal point of distribution at the first class pantry A communication from my successor described an epidemic of 100 cases on the fifteen day trip from Bombay to Britain no details being available except for the similar character of persistence It is this factor of persistence with predominantly enteric symptoms which differentiates the diagnosis in my cases from the three outbreaks of *gastro* enteritis described by Royds-Jones

A careful history and clinical examination will do much to give a reasonably exact diagnosis based on the factors mentioned above Examination of the urine will often point to an attitude of food common to all cases The stuff who prepared it must be followed up and their bowel history reviewed

A full bacteriological investigation is difficult owing to the impossibility of having a complete set of equipment always available and the medical officer fully trained and alert to use it to its full advantage It is possible to institute certain essential routines of laboratory investigation These may be based on collection and bacteriological examination of specimens of

(*a*) Suspected food and drink
(*b*) Vomit
(*c*) Faeces

Blood examinations are of little value in dealing with outbreaks of food poisoning and are better ignored under surgeon conditions They are however of considerable value in dealing with suspected outbreaks of typhoid and paratyphoid fevers Even here changes of titre are of less value than formerly believed as allowance has to be made in these special circumstances for the

presence [illegible] which usually has led T.A.B. inoculation [illegible] [illegible] [illegible] which confuse the issue. In these circumstances [illegible] [illegible] tidal culture and the bacteriological examination [illegible] cases. In [illegible] these types of food poisoning [illegible] on clinical grounds.

[illegible] to investigation of the outbreak. Specimens can be preserved by refrigeration [illegible] soon as possible to be forwarded to a laboratory. The practice of [illegible] unaccustomed bacteriology is to be deprecated as false results [illegible] in every way than no results at all. All that the ship's surgeon [illegible] sound judgment in the collection of specimens in appropriate [illegible] sterile conditions and to [illegible] the essential [illegible] the laboratory [illegible].

He must [illegible] epidemiological aspect of the problem and be able to [illegible] approach. It is amazing how the ex-general practitioner, never faced with this sort of thing in his own sphere, [illegible] investigation of the [illegible] and then appears to have exhausted his ideas. A careful [illegible] will show that routes of infection [illegible] adequate preventive measures must then be taken. A [illegible] approach leads only to confusion and the subsequent strengthening of precautions can only cause resentment. [illegible] conditions warrant. It is [illegible] that the administrative merits of the [illegible] upon. On the one hand the methods must be fully [illegible] must be adequate, relatively simple and [illegible] the possibility. The approach [illegible] understood by the staff who must [illegible] responsibility in coping with the problem. [illegible] predecessor at sea when an elderly [illegible] south. Me and the doctor [illegible] fixed it between [illegible].

If the organization of the ship [illegible] understood and the places where food is subject to contamination are noted then it is [illegible] to take steps when an outbreak occurs. The [illegible] must always be investigated and the previous medical history of the staff recorded. When there are intestinal symptoms [illegible] the infection [illegible] living organism and a human [illegible] must always be suspected. A careful and rational approach will [illegible] the [illegible]. It is quite possible to deal with the outbreak first and [illegible] the laboratory must [illegible] later by the suggested methods [illegible].

Summary

(1) The organization of the [illegible] of a passenger ship is described.

(2) Typical outbreaks of [illegible] are mentioned.

(3) Differential diagnoses are discussed with reference to staphylococcal, salmonella and dysentery infection.

(4) Methods of dealing with an outbreak are outlined.

REFERENCE

Rayns Jones, H. M. (1938) Lancet, 1, 140.

LEONARD GILLESPIE (1758–1842)
Naval Surgeon and Physician to Lord Nelson

BY

Surgeon Commander J. J. KEEVIL, R.N. (Rtd.)

[illegible]

[illegible]

[illegible]

to the *Weasel* [illegible] the West African [illegible] [illegible] about the problem of [illegible] and must have [illegible] in spite of the prev[illegible] mortality on the [illegible] months only one man [illegible] company of 12 [illegible] an account of this expedition. Meanwhile young [illegible] command was experiencing something of the [illegible] of scurvy [illegible] developing [illegible] which marked the [illegible] of his career.

Gillespie's next appointment was to H.M.S. *Sapphire* [illegible] ship serving with the fleet at New York and carrying large quantities of rum. This [illegible] was the cause of her loss [illegible] a year later, a dramatic incident of which Gillespie has left a brilliantly [illegible] description. He managed to escape by diving overboard and shortly afterwards was serving in the naval hospital at New York. There he made a special study of chronic ulcers, which were a major cause of invaliding. In passing it is pleasant to note that he found the hospital "well provided with every necessary as well of diet as medicines. Every attention was bestowed." He published his results five years later.

In 1781 he was promoted to Surgeon and appointed to the newly opened hospital at St. Lucia, whence he embarked in the summer of '83, reaching England that August. It is probable that he studied at Edinburgh and St. Andrews during the following year, St. Andrews being at that time the university from which he could most easily obtain a medical degree. But by June 1784 he was in Paris, and it was there that he gained his greatest experience of medicine and surgery. He attended the Hôtel Dieu with its four thousand patients, and developed a life-long admiration for French people and such a love of their language and literature that he became bi-lingual. But he could see the bad as well as the good, and of the medical schools would say no more than that there were excellent opportunities for dissection and midwifery, that the medical instruction was cheaper if less good than in London, and that the lectures in the operating rooms were in general adequate [illegible] as he remarks, "you can submit to the many disagreeable conditions attending students of surgery in that city." He had himself been hampered by a jostling pressing mass of "the dirtiest and lowest people in Paris."

At the age of 27 Gillespie returned to Armagh after an absence of nine years. He was urged by his family to become an apothecary, but he soon became bored with the restricted interests and pleasures of his home life. Such practice as he undertook was charitable and introduced him to conditions among the peasantry against which he revolted: [illegible] the [illegible] out of the peat in which some of his patients lived in no way differed from those of their live stock. In September 1786 he applied to the Comptroller of the Navy for an appointment. He waited for it in London, and for a while enjoyed the coffee houses, cards and playhouses, got a satin waistcoat and breeches and was enchanted by the acting of Mrs. Siddons. But within a fortnight he determined once more to improve his medical knowledge and with the help of Dr. James Sims, one of the founders of the Medical Society of London, he

began to [illegible] midwifery and the [illegible] of the Medical Dispensary [illegible] he [illegible] much at the [illegible] the sick [illegible] of his personality is shown by the [illegible] he quickly gained access to men already acknowledged as leading physicians Dr John Lettsom Henry Cline of St Thomas's William Babington at Guy's He attended meetings of the Medical Society on which he makes many illuminating comments and he was rightly critical of John Hunter who in a lecture there denied the existence of hereditary diseases while admitting hereditary characteristics But Gillespie was throughout his life as critical of himself as he was of others and even at this early age had learned that to use his own words "the physician above all the young one should look on himself as a Student of Life" He certainly profited from his year in London but in the summer of 1787 he was appointed to a frigate the *Racehorse* engaged on the anti smuggling patrol of the east coast and placed for three years in circumstances under which his medical experience could be of little avail It was monotonous and wearisome The men grew quarrelsome and readily became drunk indeed much of Gillespie's practice arose from these two circumstances while through the pages of his journals runs the terrible and unending tale of venereal diseases Only during visits to Edinburgh and at the Royal Infirmary was he able to refresh his knowledge and receive the stimulus of contact with eminent men men such as Professor Francis Home Dr Black and Dr Alexander Monro on all of whom he has left us shrewd comments The surgical cases were chiefly notable for their immense mortality of 15 cases of bubonocele operated upon in seven years all had died 4 lithotomies recently carried out by Mr Benjamin Bell had both died and of 5 operations on one day only 1 survived owing to the contagious erysipelatous fever prevailing in the Infirmary Gillespie supplemented these demonstrations with much reading carefully studying and annotating among other recent works the Treatise on Tropical Diseases by Dr Benjamin Moseley who had been Surgeon General at Kingston Jamaica during Captain Nelson's ill fated San Juan expedition A description of the sufferings of the party on the Mosquito Coast was incorporated by Moseley into his book

At last in January 1791 Gillespie was able to leave *Racehorse* and immediately returned to Paris He had been at sea when the Bastille fell in the previous July and I do not think that he had any realization of the gravity of the changes in France with which he was at that time much in sympathy Week after week he attended the practice of the Hotel Dieu the Charitee heard lectures at the Collége Royal de Chirurgie the College de Navarre the Jardin du Roi and at St Comes But the arrival of casualties in the hospitals forced the political position on his notice and he remarked that Paris was in an absurd fermentation occasioned by an absurd supposition of an attempt formed to assassinate the King and Queen It is interesting to note how very different was the mood of the mob from that which developed after the arrest of the royal family at Varennes four months later The remaining two years of Gillespie's stay were marked by successive crises and with the massacres of September 1792 it became impossible for him to continue his studies

[illegible] the [illegible] he [illegible] the [illegible]. The [illegible] however [illegible] of [illegible] changing political [illegible]. [illegible] King [illegible] times [illegible]. [illegible] regarded [illegible] while [illegible] that [illegible]. But [illegible] England [illegible] between 17[illegible] and [illegible] Gillespie [illegible] serving in the *Majestic* [illegible] the [illegible] of [illegible]. He [illegible] typhus fever [illegible] and that spread among healthy British ships [illegible] including the *Majestic*. It was Gillespie's first experience [illegible] quarters, but of this he was to see much [illegible] the *Majestic* became flagship of the West Indies where dysentery [illegible] yellow fever were decimating the fleet. He now occupied a position [illegible] responsibility and he did his best by advising against overcrowding [illegible] cleanliness and dampness between decks, but on his own ship [illegible] over forty men on the sick list and [illegible] the wreck. Meanwhile the French prisoners at Martinique were dying [illegible] prison hulks at the rate of nine a day and as a censor of their letters Gillespie came to realise much of their tragedy. A period of almost unrelieved strain was perhaps slightly lightened for Gillespie by the news that he had been granted the degree of M.D. by St. Andrews through the influence of Professor James [illegible] and his old friend Dr. [illegible]. [illegible] this he wrote his "Advice on the Preservation of the Health of Seamen in the West Indies". [illegible] His recent experiences had shown him that the health problems on the station were not fully appreciated by Commanding Officers or sufficiently realised by younger surgeons on their arrival there. Happily Gillespie was now appointed to the charge of the hospital at Martinique with 2[illegible] beds and was [illegible] medical charge of the prison ships with their seven hundred men. He was now able to do his best work.

It was at his request that the sick prisoners were allowed to get treatment in his hospital instead of lying among the still uninfected. He visited the surgeons of ships as they arrived and he called on their commanding officers. His position allowing him to exercise considerable influence in the introduction of health precautions by them. He wrote another book on the diseases of the station.

Gillespie's appointment brought him into close touch with many local administrative problems, not least of which was that caused by slavery. I am leaving the discussion of his views on this to the end, but here I should mention that about this time his relations with an unmarried slave, Caroline Hedger[illegible], half of Dutch origin, [illegible] intimate and by her he had two children, one of whom is still remembered in Dublin.

In the autumn of 18[illegible] Martinique was surrendered to Admiral Villaret Joyeuse and Gillespie called on him and offered advice on the preservation of the health of the unseasoned French troops. The admiral was accompanied

[illegible] Admiral Vaillant, who, [illegible] at the Nile and Trafalgar, had [illegible] Martinique and who still had another major defeat [illegible] to meet [illegible]

With [illegible] it is doubtful that anything effective [illegible] to prevent the epidemic [illegible] soon dominated the [illegible] Hall [illegible] with [illegible] respected [illegible] the [illegible] [illegible] [illegible] [illegible] passage [illegible] West [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [

[illegible] [illegible] Lord [illegible] asking for leave [illegible] from [illegible] all [illegible] he desired was [illegible] months sick leave and this was granted. This was a year of ever mounting tension in Europe, breathlessly awaiting the invasion of England, and Dr Snipe must have been fully conscious that the eyes of the whole world were fixed on his patient who was himself in a state of continuous strain. It must have been a relief to the Physician when the leave was granted and arrangements were made for the Admiral to take passage in the *Superb*, but early in November Nelson abandoned the idea. It is small wonder that the physician's own health began to fail or that the Admiralty gave especial care to the choice of his successor. Dr Gillespie's record both at sea and in naval hospitals and his qualities as a man marked him out for the appointment. What the Admiralty may not have realized was how closely his views on a variety of subjects would find a sympathetic echo in the mind of the Commander-in-Chief whose confidence he must gain.

The office of Physician to the Mediterranean Fleet carried with it the duties of Inspector of the Naval Hospitals at Malta, Sicily, Gibraltar and at other places, such as Naples, where they might be temporarily established; he must examine the medical reports on the health of each ship in the fleet, visit those ships whose reports indicated the need, advise their surgeons on medical matters and arrange for their supply of medical stores. As Gillespie wrote to his sister Jane, these were to him all very familiar and agreeable duties. But he made no reference to the chief object of his appointment, or to such difficult and delicate duty as that which the Commander-in-Chief was shortly to require of him when he directed him to examine with the captains and surgeons of the various ships any officers desiring leave of absence on the score of ill-health. Meanwhile the Admiral's baggage continued on board H.M.S. *Superb*, but the Admiral with his failing vision and his increasingly impaired physical resistance remained continuously on board his flagship.

Gillespie had taken passage to Gibraltar in the *Imperieuse* frigate. At Gibraltar he received news of Napoleon's coronation at Notre Dame and how all countries were wondering what it might not presage. He took a last opportunity to write to Jane and send messages for the children but made no comment on the international situation. Meanwhile H.M.S. *Swiftsure* was carrying him to a flagship in which the name of 'Buonaparte' was rarely heard, all attention being riveted on the movements of his chosen Admiral Villeneuve.

On 2[illegible]th December 1804 the *Swiftsure* sighted the fleet of ships of the line, frigates and sloops blockading Toulon — the lofty and tremendous bulwarks of Britain following in regular train their admiral in the *Victory*. Gillespie always responded to the emotional appeal of any dramatic situation, and must have felt a sense of exaltation when on 2nd January 1805 the *Swiftsure*'s boat brought him alongside the flagship and he looked up at the crowd of sail towering and swaying above him.

Gillespie found that his reputation had preceded him and that on his arrival on board he already enjoyed 'the good opinion of his lordship and his officers'. Nelson may well have had a very detailed and favourable report

[illegible] from Admiral [illegible] who [illegible] in command of the *Anchorage* [illegible] very good opinion [illegible] Gillespie's personal and professional qualities. The effect of his pleasant welcome must have been enhanced by the realization that he would have to touch little of his salary of £487 a year since he was to keep house as he wrote to Jane one of the suite and family of Lord Nelson and [illegible] in a princely style free from expense. To us who know that at this time Lord Nelson possessed £1 000 in funds and some eighty four guineas in his purse it is ironical to think of his messing free a physician who had some £20 000 carefully invested. Gillespie was however a very happy addition to the somewhat hurried and strained company at the Admiral's table where the officers had met daily for upwards of twenty months without setting foot on shore. Even Nelson although he concealed it in public admitted to Lady Hamilton his great weariness of the monotony and inaction of the blockade. Our days pass so much alike he wrote to her that having described one you have them all — we cruise cruise.

Gillespie was lucky in having missed so much of it and could bring fresh views and fresh energy to the parties in the Great Cabin. He found his duties sufficiently light for him thoroughly to enjoy the comforts of life as one of the Admiral's suite. No epidemics of yellow fever or dysentery called for contagious though difficult decisions and often unwelcome advice as they had in his last flagship *Majestic*. When he joined the *Victory* only one of her 840 men was in his rôle through sickness the other ships were equally healthy. The mutinies and insubordination the intoxication and the license with which he was all too familiar were wholly absent he could write of the good discipline spirits and disposition towards gallant and revered commander Lord Nelson. Gillespie quickly shared the general admiration for a man in whom noble kindness of manner freedom from vain formality and pomp (so necessary to the decoration of an empty little great man) ran only be equalled by the unexampled glory of his naval career. In a long letter to Jane begun off Sardinia on 7th January and continued till March he described the pleasures of a typical day at Gibraltar his servant brought a light and informed him of the then wind weather and course of the ship. The scene of this highly nautical awakening was a dark little wooden compartment off a temporary thunderbox in which so Gillespie wrote one of the *Victory's* 110 guns occupies a very distinguished station. Soon after being called he was on deck to watch the dawn and then joined Lord Nelson Rear Admiral Murray Captain Hardy the Reverend Dr Scott and John Scott the secretary with perhaps one or two ships officers at breakfast. Tea hot rolls toast cold tongue etc were followed by seven hours of business study writing and exercise during which he occasionally visited the sick bay when required by the surgeon. In spite of these occupations it was an essentially leisurely life at 2 o'clock a band of music plays till within a quarter to 3 when the drum beats the time called. The Roast Beef of Old England announces the Admiral's dinner when the best wines and most exquisite viands were served. But even without the claret and champagne there was an atmosphere of such urbanity and hospitality that Gillespie felt it would be anyone's

[illegible] he were not perfectly [illegible]. Coffee and [illegible] closed the [illegible] meal at 4.30 or [illegible] p.m. [illegible] the company [illegible] walk about [illegible] when a band of music played [illegible]. [illegible] for the next two hours [illegible] Gillespie [illegible] that Lord Nelson [illegible] himself [illegible] free from stiffness and pomp [illegible] communication. [illegible] suggest some of the [illegible] on which the Admiral [illegible] his [illegible] and a remarkable [illegible] all problems [illegible] them dispassionately. [illegible] Gillespie's [illegible] seemed remarkable [illegible] strong and easily aroused. Nelson and his physician differed [illegible] character but shared much [illegible] in common, and [illegible] many matters. Both had spent [illegible] their lives [illegible] and actions were devoted to their professions [illegible] and [illegible] admiration for fine qualities [illegible] than the claret and champagne they must [illegible] on the question of rum. [illegible] his first [illegible] Nelson [illegible] written of one of his officers [illegible] like his physician, always been a strong [illegible] instead of spirits. Of which [illegible] Gillespie [illegible] the Medical Society of London [illegible] drinking [illegible] with three times [illegible] But it had been on the [illegible] made spirits cheap that he had seen drunkenness [illegible] Navy. [illegible] young man he offered advice on this [illegible] service should revert to the practice of the Duke of York [illegible] good Portugal, a Spanish wine, or beer. In 1802 he [illegible] Nelson's great patron and friend, Lord St. Vincent [illegible] health that the rum issue was causing, particularly [illegible] in the tropics. [illegible] and constructive alternatives [illegible] small payment to the men of wine or beer were [illegible] money being available for buying extra fruit and vegetables [illegible] resources. If rum were unavailable he advised [illegible] recognized the need for a substitute for water [illegible] ships resembled a thick sort of ink, and had been so bad that [illegible] the whole ship and the [illegible]

Gillespie was accustomed to the accommodation of prostitutes [illegible] the ships in which he had served, and thought that the [illegible] rather than Lord Nelson's prohibition of such passengers [illegible] of dealing with venereal diseases. But Gillespie had [illegible] high opinion of this in His Majesty's ships [illegible] of [illegible] the mutual carryings of [illegible] the temptation to indulge [illegible] the disregard for and contempt of religion and [illegible] and [illegible] practice of [illegible] more than one of his patients had been the [illegible] and

this was [illegible] which he felt so strongly that [illegible] a particularly inhuman patent in the *Register* deal of a revolver shot [illegible] In this way Gillespie inserted an obituary notice in the *Caledonian Mercury* vigorously condemning what he described as an inhuman practice

A subject on which he and the Admiral had identical views was that of manning the Navy. Neither of them had any love for the press gang and both had made official suggestions for alternative methods. Gillespie had seen the gangs at work many times and been witness to a particularly brutal raid on merchant seamen in Shields Harbour when one of the impressed men had been dangerously wounded while defending himself. Gillespie was convinced that these methods would have been unnecessary had some attempt been made to improve naval hygiene and thus not only reduce the losses but provide more attractive conditions — even an officer's bedding might in his own words be "perfectly rotten and stinking". He had suggested a scale of pay of 31s a month and that seamen should be promised their discharge at the end of a definite period of service.

Although it is an earlier Physician to the Fleet Dr. Thomas Trotter who deserves the credit for reforms in seamen's dress Gillespie too was insistent on the need to supply proper uniforms for the men and could strongly support the Admiral's views on this question. He may have felt it best to avoid the topic of naval punishments in a fleet accustomed to the iron discipline of the Earl of St. Vincent in his journal however Gillespie noted an account of one of St. Vincent's punishments and made the private comment "severity in punishment so far at times from preventing the commission of crimes tends to render them more numerous and flagrant".

By 8 p.m. the guttering candles in the Great Cabin were burning low and conversation began to languish. The Admiral liked to be in bed before 9 and the signal for the party to begin breaking up was the arrival of a tumbler of punch with lake or biscuit. But it was still too early for Gillespie to retire and he would either read for an hour or join old friends in the ward room. There political and other subjects could be raised in which the Admiral was not interested. Nearly all the officers had personal experience of the slave trade but few of them could have shared Gillespie's views for he was an ardent if unassuming Abolitionist. He spoke of the atrocities we have deliberately and systematically been guilty of towards the Negroes and long before a naval blockade was established to prevent it he pointed out the iniquities of the trade in slaves with South America most of whom were carried in British ships to Guinea. He had foreseen the horrors of the destruction of the prosperous towns of San Domingo by negroes when they rose in savage reaction to oppression. He felt that the future conflict between black and white would be of the most serious import to all the American colonies. He spoke from close personal experience for he had even visited slave ships in the West Indies to see for himself the conditions under which the middle passage was made and how the mortality could be reduced among people upon whom he looked as innocent victims of avarice and injustice. Admittedly he had never identified himself with the Abolitionists, but he never had tried to form

groups to support his views for which he felt he needed no reassurance holding them with all the courage of an absolute conviction Thus he worked quietly as a ferment leavening the outlook of those among whom he found himself trusting to the respect in which he was held to give weight to his exposure of the darker side of European civilization Not only its insatiable avarice but its intolerable tyranny its ferocious barbarity and its vain wars of conquest had driven him to the conclusion that there was only one hope for its survival a hope which was to be realized more than a century later

When he asked will Nations arrive at the manhood of Reason so that there could be a peaceable Union or Confederation of all European and Christian States But even while he admitted that there alone lay a hope for civilization he fully recognized the difficulties which would arise from differences of education religion or national pursuits and all the deeply rooted prejudices which sprang from them

Both Nelson and Gillespie had seen the French Revolution at close quarters, but Gillespie must have kept the full expression of his views for the ward room for although he had quickly come to see the dangers of mob rule and anarchy had dismissed its supporters as sans culottes and recognized the grave possibilities of the spread of underground republicanism yet his experience among the peasants of Armagh had never faded from his mind He inveighed against absentee landlords and castigated the society of his time with its restless ambition envy boredom and dissipation The sight of a nobleman rolling to St James s in a splendid carriage with outriders would call from him the withering comment These diseased Beaux

But after the 19th January 1805 the whole tempo of life in the *Victory* suddenly changed boredom gave place to an intense alertness and leisurely conversations ceased On that Saturday at the Maddalena Islands news reached Nelson that the enemy was at last at sea, and he sailed within three hours Gillespie was impressed by the promptitude and decision of the Admiral the more of whose conduct in danger and critical situations I am witness to the more am I forced to admire and revere him but when on the following day Nelson made the general signal Prepare for Battle Gillespie wrote to his sister for my own part I behold with great coolness the enthusiasm of all around me in anticipating the laurels to be gained in the expected battle I regard such things as necessary evils in which every man is bound to do his duty to the utmost of his power and not as a matter for any great degree of exultation It is indeed significant that he should have used almost the very words of the famous signal which was to be made on the 21st October under identical circumstances and it is indeed remarkable that no comment has ever been made on the stern and restrained wording of that signal so much more characteristic of the dispassionate physician than the fighting and emotional Commander in Chief Gillespie had seen in the cockpit too much of the carnage of war to feel anything but thankfulness that his own role in the threatened battle was to remedy the disasters towards our fellow creatures which it would bring But the long chase only led them up to

Stromboli and South eastwards to Alexandria back to Malta and the British coast and never within sight of the enemy.

Every bulkhead had long since been taken down and the gun on what had once been the cabin of the Physician to the Fleet was now constantly manned. Lord Nelson was in a fever of impatience and under great tension. In March Gillespie came to the same decision as his predecessor Dr. Snape but under much more anxious circumstances. He wrote a letter to the Admiral humbly insisting on his return to England before the hot months further reduced his health. But Nelson fixed his course to the West Indies. It was only in July, after failing to overtake Villeneuve, that he decided that if he could not catch up with him before they reached Gibraltar once more he would in fact take their Lordships permission to go to England to try as he admitted and repair a very shattered constitution. He even went ashore at Gibraltar after not having left his ship for close on two years.

On 18th August the *Victory* anchored at Spithead and the Admiral granted Gillespie leave to go to London his own order of release came at 7 p.m. the following evening.

Gillespie had brought to a successful close a most difficult contest of wills and could have seen no reason for remaining any longer in the *Victory* but he gave as his reason for resigning his appointment indifferent health and having served a sufficiently long period on a foreign station. His survival was perhaps due to this decision both his travelling companions in the London coach Mr. Secretary Scott and Captain Adair of the Marines were killed with their Admiral at Trafalgar four months later.

It is possible that ill health was indeed a factor which influenced Gillespie for he refused an appointment to the naval hospital at Yarmouth and in the autumn he went to Cheltenham. He was able to join the official mourners at Nelson's funeral at St. Paul's on 9th January 1806 but he held no further naval appointment and contributed no more to the medical press. In 1809 he was placed permanently on half pay receiving 10s. 6d. a day for the remainder of his life.

Unfortunately I have not been able to trace his later journals and so cannot give his views on the crowded events of the following years which witnessed the abolition of the slave trade and the outbreak of the Peninsular war. It is only the official records which reveal how much of his life after the peace was spent in Paris so that he must have come to regard it as his home.

Each year Gillespie had to request from the Admiralty leave to reside abroad and these applications give an indication of his movements. To make his request he would return to London each summer for two or three months during which his address was the Senior United Services Club and return to Paris in September.

In 1837 Charles Louis Bazin painted his portrait in oils in the uniform of a Physician to the Fleet and another portrait in water colour was painted about the same time past the open window of the background sails H.M.S. *Victory* in commemoration of a proud association.

On 1st August 1840 Gillespie returned to France as usual for another

years he was [illegible] but he decided not to winter [illegible] Paris. He had had a [illegible] on [illegible] on the previous three [illegible] and on 31 May 1851 he [illegible] it was time to bring up to date the [illegible] made at Montpellier with the [illegible] Golden Hedges now long dead. Perhaps it was the state of health or perhaps a wish to avoid the [illegible] arrival of the body of Napoleon at the Hôtel des Invalides on 14 December which prompted him to winter in Naples.

It proved to be a severe season even in Naples and he stayed there until April when he made a leisurely sight-seeing journey through Rome up to Turin and across Lake Maggiore. At Airolo he had to cross the St. Gothard and reached the hospice in heavy rain: the road ahead was blocked by an avalanche but was hardly negotiated on sledges. Eventually with his three fellow travellers among whom was the Prince of Orange he reached Flushing near Altdorf on 7 a.m. on 30th May and took the steamer to Lucerne. By slow stages he moved through Germany and Holland to take passage from Antwerp for London where he arrived in July 1841.

Once more he wrote to the Admiralty from the Scottish United Services Club and once more another year's hiatus was granted. But the ruin of eighty-three who left England for the last time in 2nd September 1841 was inflicting health and Gillespie died in the following March. He is buried at Père Lachaise.

I have presented Gillespie as a man of ideas and not as a pioneer or discoverer. But perhaps I should claim one pioneering action on his behalf: in 1801 he initiated the policy of supplying books to naval ships by himself arranging for the supply of some books to two of them. In bequeathing his library to Haslar he may also be the first to have provided a reference library for a hospital staff. On this note I shall leave him to your recollection as worthy of remembrance.

CLASSIFIED MEDICAL REFERENCES IN THE WORKS OF SHAKESPEARE

BY

Surgeon Commander J. W. L. CROSFILL, R.N.

PART V

GAIT

647	*Cassius*	His coward lips did from their colour fly, And that same eye whose bend doth awe the world Did lose his lustre: I did hear him groan: Ay, and that tongue of his that bade the Romans Mark him and write his speeches in their books, Alas, it cried, 'Give me some drink, Titinius,' As a sick girl. Ye gods, it doth amaze me A man of such a feeble temper should So get the start of the majestic world And bear the palm alone.—*Julius Caesar* I 2
648	*Quelch*	If I should remember him: does he not hold up his head, as it were, and strut in his gait?—*Merry Wives of Windsor* I 4
649	*Juliet*	But old folks, many feign as they were dead; Unwieldy, slow, heavy and pale as lead.—*Romeo and Juliet* IV 1
650	*Ulysses*	This is not strange, Ulysses. The beauty that is borne here in the face The bearer knows not, but commands and rules. Its fellow eyes and wonders at the self How can that be, when it doth not perceive it? Or the dull brain wracks on his own gait? He rises on the toe.—*Troilus and Cressida* IV 5

GALL

651 [illegible] ...engre.—*Gillell* ix 5

654 [illegible] ...Aug *I* iv 4

GARDENER

655 [illegible] ...*Hamlet* [illegible]

GUESTS

656 *Merchet* ...

657 *Bennet* ...

Hall ...

658 *Hall* ...

659 *Marcellus* It faded ...
And ...
The ...
...
So ... *Hamlet* ...

[The ...
and ...

660 *Hamlet* ...

Horatio ...

Hamlet ...

Horatio ...

Hamlet ...

Horatio ...

661 *Horatio* ...
...
And draw you out ...

I believe that those apparitions and ghosts of departed persons are not the
[illegible] angels of men but the unquiet walks of devils prompting and suggesting
[illegible] mischief blood and villany —Sir Thomas Browne's Relig
16[illegible])

Giants

Giants were kept at Court or by persons of nobility as either porters or servants They do not seem to have occupied the same social position as that attained by dwarfs William Evans was the servant of Charles I He was nearly 8 feet tall and was accustomed to carry a dwarf about in his pocket Queen Elizabeth had a porter 7½ feet tall whose portrait was painted by Zucchero George III had a porter Big Sam who was 8 feet tall Eight feet or thereabouts is the average height of known giants rarely is it exceeded appreciably The old records suggest heights of 20 feet or more These accounts are based on the findings of bones in the days when comparative anatomy was an almost unknown science and moreover when credulous acceptance of fantastic stories was the rule rather than the exception The accounts are believed to have been based on the finding of animal bones

Goliath was apparently 10 feet 6 inches tall accepting a cubit as the distance from the point of the elbow to the tip of the middle finger and a span as half that distance 10 and 10 inches respectively

For only Og king of Bashan remained of the remnant of giants behold his bedstead was a bedstead of iron is it not in Rabbath of the children of Ammon ? Nine cubits was the length thereof and four cubits the breadth of it after the cubit of a man —Deuteronomy III Verse 11 The bedstead was therefore fifteen feet long

The skeleton of the Irish giant O Brien in the Museum of the Royal College of Surgeons London fortunately escaped the bombing The skeleton was obtained with difficulty by John Hunter 1728 1793 who is said to have spent £500 in acquiring it The Irishman on the story runs had heard of Hunter's determination to possess the skeleton and was equally determined that this should not occur He paid some fishermen to take his body to sea and there to sink it Hunter had kept himself aware of the Irishman's whereabouts and, in spite of O Brien's precautions his body was obtained and the skeleton preserved It measures some 7 feet 8½ inches

[illegible] Scene I
no grim porter at his gate
But rather all the doors and gates will stand
All thrust wide by —*Timon of Athens* III 2

663 *Bastard* Colbrand the giant that same mighty man —*King John* I 1
(Colbrand Gun by Guy of Warwick was a Danish giant in a mediæval romance)

Ginger

The Guild of Pepperers, with which were originally incorporated the Apothecaries received their charter in the fifteenth century Ginger aptly symbolizes this union since it is both a flavouring agent and a therapeutic substance at one time widely used in medicine

Ginger as Dioscorides reporteth, is right good with meat in sauces, or otherwise in conditures for it is of an heating and digesting qualitie, and is

profitable for the stomacke and effectually opposeth it selfe against all [illegible] of the sight answering the qualities and effects of pepper [5]

664 *Clown* and ginger shall be hot i' the mouth too —*Twelfth Night* [illegible]

Goitre

665 *Gonzalo* When we were boys
Who would believe that there were mountaineers
Dew lapp'd like bulls whose throats had hanging at 'em
Wallets of flesh? or that there were such men
Whose heads stood in their breasts? which now we find
Each putter out of one for five will bring us
Good warrant of —*Tempest* III 3

(Goitre occurs characteristically in mountainous regions)

The putter out of one for five [illegible] the Elizabethan [illegible] insurance A sum of money was deposited by an intending traveller with [illegible] broker If the traveller returned he was paid [illegible] according to the agreed odds If he failed to return the stake was kept by the holder

I am determined to put forth some five thousand pounds [illegible] five for one upon the return of myself and [illegible] from the Turk's Court in Constantinople — Jonson's *Every Man Out* [illegible]

In those days the greatest danger to the traveller [illegible] shipwreck or capture by pirates but the risk of death from [illegible] the death rate on long voyages was fantastic [illegible] lost [illegible] men in 1498 The following letter from Lord Howard to Lord Burghley is worth quoting in full [illegible] of the [illegible] in the Elizabethan Navy

My good Lord

Sickness and mortality begins wonderfully to grow [illegible] and it is a most pitiful sight to see here at Margate how the men having no place to receive them into here die in the streets [illegible] to come a land to see them bestowed in some lodging [illegible] barns and such out houses and the relief is small [illegible] them [illegible] It would grieve any man's heart to see them that [illegible] so miserable

The Elizabeth Jonas which hath done as well as ever any ship [illegible] hath had a great infection in her from the beginning [illegible] the 500 men which she carried out by the time we had been in Plymouth [illegible] there were dead of them 200 and [illegible] all the rest of her men ashore [illegible] three or four days together [illegible] of her infection and thereupon [illegible] and put them into her Now the infection [illegible] greater extremity than ever it did before [illegible] I am driven of force to send her to Chatham [illegible] the men [illegible] throughout the most part of our fleet for they have been [illegible] have scarce [illegible] apparel and [illegible] places to [illegible] and no money wherewith to buy it for some of them [illegible] part—these eight months at sea My Lord I would think [illegible] way that there were a thousand pounds worth or two [illegible] hose doublets shirts shoes and such like sent [illegible] and I think your Lordship might [illegible] the Controller of the Navy and [illegible] Mr Hawkyns [illegible] all expedition [illegible] away of such [illegible] mariner [illegible] as may be and [illegible] discharge [illegible] I bid your Lordship farewell

From Margate the 10th of August 1588

Gout

666 *Timon* When gouty keepers of thee cannot stand —*Timon of Athens* IV 3

Falstaff You rogue, here's lime in this sack too. —*Henry IV* Pt. I, Act II, Sc. 4

(*See also* 25)

The vintners of London put lime in sack, and thereby preserved infirm and decrepit old men, especially the gouty. Lister's Osbornia (1684)

668 *Falstaff* A man can no more separate age and covetousness than he can part young limbs and lechery; but the gout galls the one, and the pox pinches the other; and so both the diseases prevent my curses. A pox of this gout! or a gout of this pox! for the one or the other plays the rogue with my great toe. 'Tis no matter if I do halt; I have the wars for my colour, and my pension shall seem the more reasonable. A good argument will make use of anything; I will turn diseases to commodity.

Henry IV Pt. I, Act III, Sc. 3

(The hexameter and the last part of the quotation are unknown; the diagnosis of gout is

668 *Palamon* ... to prevent
The loathsome misery of age, beguile
The gout and rheum that in lag hours attend
For gray approachers. —*Two Noble Kinsmen* Act I, Sc. 4

Palamon points out that gout and rheumatism combined can be prevented by lying young.

67 *Palamon* ... The aged cramp
Had screw'd his square foot round
The gout had knit his fingers into knots. —*Two Noble Kinsmen* Act I, Sc. 4

(The last portion is scarcely plausible if the preceding should be literally true.)

171 *Ulysses* ... he hath the joints of everything, but everything so out of joint that he is a gouty Briareus, many hands and no use, or purblind Argus, all eyes and no sight. —*Troilus and Cressida* Act II, Sc. 3

Briareus, with a hundred hands and fifty heads, who assisted the gods in their battle against the rebellious Titans, and was severely shaken by Jupiter's thunderbolts.

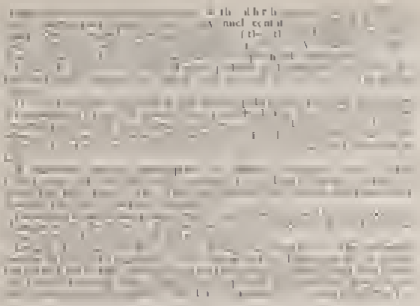
Argus, a monster with a hundred eyes, who, detached from his body, became the peacock's tail. Juno, to whom Argus belonged, placed the eyes in the tail, and they remained there. Argus slept at any one moment with only fifty of his eyes closed, the other fifty remaining open and watchful.

[illegible] *Ulysses* ... Yet am I better
Than one that's sick o' the gout: since he had rather
Groan so in perfect ease than be cured
By the next pharmacon that's athwart
Make hale these locks. —*Cymbeline* Act V, Sc. 4

[illegible] *I* ... What maladies have we that?

[illegible] *I* ... With the first that I have an and a rich man that hath not the gout: for the one sleeps easily because he cannot study, and the other lives merrily because he feels no pain; the one lacking the burden of lean and wasteful learning, the other knowing no burden of heavy tedious penury. —*As You Like It* Act II, Sc. 1

... The next is that cuffers-up his gold
In gouts, consumptions, rumps and gouts and painful fits
And scarce hath eyes his treasure to behold
But like still pining Tantalus he sits
And scarce hath use the harvest of his gain
But like a wretch that keeps and cures his pain. —*Lucrece* 855



Greek

[illegible]	*Iliad*	[illegible]
[illegible]	*Iliad*	[illegible]
[illegible]	*Iliad*	[illegible]
678		[illegible]
679		[illegible]
680		[illegible]
681		[illegible]
682		[illegible]
683	*Sir T. H.*	[illegible]
684	*H. D.*	[illegible]
685	*Brutus*	[illegible]
686	*Hamlet*	[illegible]

687 *Queen* Oft have I heard that grief softens the mind
And makes it fearful and degenerate —*Henry VI* Pt 2 iv 4

Guilds

688 *Flavius* you ought not to walk
Upon a labouring day without the sign
Of your profession —*Julius Cæsar* i 1

Guts

689 *Hamlet* I'll lug the guts into the neighbour room —*Hamlet* iii 4

690 *Hamlet* A man may fish with the worm that hath eat of a king
and eat of the fish that hath fed of that worm

King What doth thou mean by this?

Hamlet Nothing but to shew you how a king may go a progress
through the guts of a beggar —*Hamlet* iv 2

691 *Pistol* I will ketch thy rum out at thy throat
In drops of crimson blood —*Henry V* iv 4

[a fat pannuch caule sewet rim or kell wherein the bowels are lapt — Florio's Dictionary 1616]

692 *Pistol* Let vultures gripe thy guts!—*Merry Wives of Windsor* i 3

693 *Mrs Page* one that is well nigh worn to pieces with age
to show himself a young gallant thus Flemish drunkard
as sure as his guts are made of puddings —*Merry Wives of Windsor* iii 1

Habits

694 *Lady Percy* And speaking thick which Nature made his blemish —
Henry IV Pt 2 ii 3

695 *Winter* When icicles hang by the wall
And Dick the shepherd blows his nail —*Love's Labour's Lost* v 2

(Dick was in blowing his nails because of the winter's cold. It is so represented to be a habit bred of idleness and lack of other occupation)

696 *Gremio* Our love is not so great Hortensio but we may blow our nails
together and fast it fairly out *Taming of the Shrew* i 1

697 *King* When dying clouds contend with growing light
What time the shepherd blowing of his nails
Can neither call it perfect day nor night —*Henry VI* ii 3 iii 5

698 *Valentine* How use doth breed a habit in a man!—
Two Gentlemen of Verona v 4

699 *Adam* Though I look old yet I am strong and lusty
For in my youth I never did apply
Hot and rebellious liquors in my blood
Nor did not with unbashful forehead woo
The means of weakness and debility
Therefore my age is as a lusty Winter
Frosty but kindly *As You Like It* ii 3

700 *Corin* You told me you salute not at the Court but you kiss your
hands that courtesy would be uncleanly if courtiers were
shepherds we are still handling our ewes and their fells
you know are greasy

I——*tone* Whi[illegible] [illegible]ur courtier's hands swe[illegible] [illegible]
greasi of a m[illegible]n as wholesome as the [illegible]
[illegible]
Besides our han[illegible]are hard And they [illegible]
with the surgery of our sheep and no[illegible]
far? The courtier's hands are perfumed with [illegible]t

I——*stone* Civat is of a baser birth than tar—the very uncleanly flux of a cat God help thee shallow man God make incision in thee! thou art raw That is another simple sin in you
As You Like It [illegible]

HÆMORRHAGE

701 *Sergeant* But I am faint my gashes cry for help
Duncan So will thy words become thee as thy wounds
They smack of honour both —Go get him surgeons —
Macbeth 1 2

702 *Roderigo* Nobody come? then shall I bleed to death —*Othello* v 1

703 *Othello* O ill starr'd wench!
Pale as thy smock —*Othello* 1 2

(The stage directions for the death of Desdemona are not explicit Initially she is strangled by Othello who not satisfied by this says
Not dead? not yet quite dead?
I that am cruel am yet merciful
I would not have thee linger in thy pain
So so
The usual stage presentation is that Desdemona is then stabbed The resulting hæmorrhage makes pale as thy smock consistent which would not be so were the strangling rejected)

704 *Clifford* The sin hath got into my deadly wounds
And much effuse of blood doth make me faint —*Henry VI* Pt 3 II 6

705 *Anne* O gentlemen see see! dead Henry's wounds
Open their congeal'd mouths and bleed afresh!—
Blush blush thou lump of foul deformity
For 'tis thy presence that exhales this blood
From cold and empty veins where no blood dwells —
Richard III 1 2

(The speech incriminates Gloster as Henry's murderer in the light of the old superstition that the corpse would bleed in the presence of the murderer The incident is recorded in Holinshed The dead corps on the occasion even was conveied with bills and glaives pompishe (if you will call that a funerall pompe) from the Tower to the church of saint Paule and there laid on a bearc y coffen bare laced the same in the presence of the beholders did bleed where it rested the space of one whole daie From thense he was carried to the Blackfriers and laid there likewise)

706 *Lucilius* Yet I may bind those wounds up that must open
And bleed to death for my sake else —*Two Noble Kinsmen* IV 2

HAIR

707 *Sir Andrew* I would I had bestowed that time in the tongues that
I have in fencing dancing and bear baiting

Sir Toby Then hadst thou had an excellent head of hair for thou
seest it will not curl by nature —*Twelfth Night* 1 3

(Modern pronunciation masks the intended play upon the words tongue and tress, The Elizabethan courtier's hair was curled.)

708 *Duke* When time hath sow'd a grizzle on thy case —*Twelfth Night* V 1

(The Duke is commenting on the apparent youth of Viola whom he takes for a boy as indicated by the absence of facial hair)

209 *Metellus* ... for his silver hairs will purchase us a good opinion.—*Julius Cæsar*, II, 1.

210 *Edgar* ... elf all my hair in knots ... —*King Lear*, II, 3.
[illegible] hair was ... [illegible]

211 *Aaron* Madam, though Venus govern your desires,
Saturn is dominator over mine:
What signifies my deadly-standing eye,
My silence and my cloudy melancholy,
My fleece of woolly hair that now uncurls
Even as an adder when she doth unroll
To do some fatal execution?
No, madam, these are no venereal signs:
Vengeance is in my heart, death in my hand,
Blood and revenge are hammering in my head.
—*Titus Andronicus*, II, 3.

212 *Bassanio* Look on beauty,
And you shall see 'tis purchased by the weight;
Which therein works a miracle in nature,
Making them lightest that wear most of it:
So are those crisped snaky golden locks
Which make such wanton gambols with the wind,
Upon supposed fairness, often known
To be the dowry of a second head,
The skull that bred them in the sepulchre.—
Merchant of Venice, III, 2.

[illegible] making ... in the hair ... [illegible] ... 1668 ... [illegible] ... Westminster ... I bought ... [illegible] ... after the plague ... [illegible] ... March ... 1662 ... [illegible] ... (what them.)

213 Thus is his cheek the map of days outworn,
When beauty lived and died as flowers do now,
Before these bastard signs of fair were born,
Or durst inhabit on a living brow;
Before the golden tresses of the dead,
The right of sepulchres, were shorn away,
To live a second life on second head;
Ere beauty's dead fleece made another gay.—*Sonnet* 68.

214 [illegible] I'll be the Constable ... my mistress wears her own hair ... —*H*[illegible]

215 [illegible] Hath any man seen him at the barber's?

216 [illegible] No, but the barber's man hath been seen with him, and the old ornament of his cheek hath already stuffed tennis-balls.
Much Ado About Nothing, III, 2.

HALITOSIS

217 [illegible] Foul words is but foul wind, and foul wind is but foul breath, and foul breath is noisome; therefore I will depart unkissed.
Much Ado About Nothing, V, 2.

[illegible]

HALLUCINATIONS

[illegible]

718 [illegible]

[illegible]

Macbeth III. I

719 [illegible]

720 [illegible]

721 [illegible]

722 [illegible]

723 [illegible]

724 [illegible]

725 [illegible]

HAND

A moist palm indicated lustfulness whilst a dry one [illegible] debility.

726 *Othello* Give me your hand. This hand is moist, my lady.

Desdemona It hath felt no age nor known no sorrow.

Othello This argues fruitfulness and liberal heart: Hot, hot and moist: this hand of yours

727 *Viola* I pray you, sir, what is it o'clock?

Sir Andrew Why, for that I may pull on my gloves.

Maria Your sweet hand.

[illegible]		With this she seizes on his palm [illegible] of pith and liverhood —*Venus and Adonis* 25
729	*Val.*	[illegible]
	Dr.	[illegible] in the palm of her hand — *Comedy of Errors* III 2
730		My [illegible] moist hand —*Venus and Adonis* 143
731	*Iras*	There's a palm presages chastity if nothing else
	Charmian	E'en as the o'erflowing Nilus presageth famine
	Iras	Go you wild bedfellow you cannot soothsay
	Charmian	Nay if an oily palm be not a fruitful prognostication I cannot scratch mine ear —*Antony and Cleopatra* I 2
732	*Casca*	and chapp'd their chapp'd hands *Julius Cæsar* I 2
733	*Touchstone*	the cow's dugs that her pretty chapp'd hands had milk'd — *As You Like It* II 4

Headache

Neither Shakespeare nor Gerard have much to say about headache One would suppose that the alcoholic habits of Elizabethan England would have given rise to much therapeutic activity in attempts to mitigate the subsequent headache

And it is reported that five or six Almonds being taken fasting do keepe a man from being drunke These also cleanse and take away spots and blemishes in the face, and in other parts of the body With hony they are laid upon the biting of mad dogs being applied to the temples with vineger or oile of Roses they take away the headache They are also good against the cough and shortnesse of winde [5]

734	*Desdemona*	Why do you speak so faintly ? Are you not well ?
	Othello	I have a pain upon my forehead here
	Desdemona	Faith that's with watching 'twill away again Let me but bind it hard within this hour It will be well
	Othello	Your napkin is too little —*Othello* III 3
735	*Arthur*	When your head did but ache I knit my handkerchief about your brows And with my hand at midnight held your head —*King John* IV 1

Health

736	*Brutus*	It is not for your health thus to commit Your weak condition to the raw cold morning —*Julius Cæsar* II 1
737	*Portia*	Is Brutus sick ? and is it physical To walk unbraced and suck up the humours Of the dank morning ? What is Brutus sick And will he steal out of his wholesome bed To dare the vile contagion of the night And tempt the rheumy and unpurged air To add unto his sickness ? No, my Brutus You have some sick offence within your mind Which, by the right and virtue of my place I ought to know of —*Julius Cæsar* II 1

738 *Lucius* Here is [illegible] that would speak with [illegible]

Lucius Vouchsafe [illegible] from a feeble [illegible]

Brutus O what a time [illegible] that e chosen out [illegible]
To hear their [illegible] Would you were not sick [illegible]

(If any thing be sick they make [illegible] and if that will not mend him then God be merciful It [illegible] Cheshire)

739 *Ghost* Sleeping within my orchard
My custom always in the afternoon [illegible]

740 *Caliban* Why as I told thee 'tis a custom with [illegible]
I the afternoon to sleep —*Tempest* II 2

(Caliban is referring to Prospero The Bacchanal [illegible] Bacchus who himself was [illegible] Immediately after [illegible] the [illegible] I could not yet find reason [illegible] and strength [illegible] to sleep)

741 *Lear* Why thou were butter in thy grave [illegible]
uncover'd body this extremity of the skies —*Lear* [illegible]

742 *Lord* Balm his foul head in warm distilled waters
And burn sweet wood to make the lodging sweet
Taming of the Shrew [illegible]

743 *King* For our bad neighbour makes us early stirrers
Which is both healthful and good husbandry *Hamlet* [illegible]

744 *Benedick* Being entertained for a perfumer as I was smoking a musty room —*Much Ado About Nothing* I 3

(The smoke of Juniper is in great request with us at Oxford [illegible] chambers Burton's Anatomie of Melancholy 1621)

The savor or smell of the Water Mint rejoyceth the heart [illegible] came they use it in chambers and places [illegible] repose and where feasts and banquets are made [illegible]

745 *Don Pedro* Nay he rubs himself with civet can you smell him out by that?

Claudio And when was he wont to wash his face? —
Much Ado About Nothing [illegible]

746 *1st Lord* Sir I would advise you to shift a shirt the violence of action hath made you reek as a sacrifice —*Timon* I 2

747 *Coriolanus* Bid them wash their faces
And keep their teeth clean —*Coriolanus* II 3

748 *Brutus* our best water brought by conduits hither *Coriolanus* II 3

September 2nd 1663
(Going through the City my Lord Mayor told me how the pillers set up by Exeter House is only to show where the pipes of water run [illegible] the City and observed that this City is as well watered as any city in the world [illegible] Lepus [11]

749 *Commius* butchers killing flies —*Coriolanus* IV 6

(*To be continued*)

Clinical Notes and Cases

A DENTAL EXAMINATION OF THE INHABITANTS OF THE ISLAND OF TRISTAN DA CUNHA

BY

Surgeon Commander (D) F B GAMBLEN, R N

The recent official visit of H M S *Acheron* (Commander R C P Wainwright, D S C R N) to the island of Tristan da Cunha gave an opportunity to re-examine the dental condition of the Islanders and to compare it with the previous surveys carried out by Surgeon Lieutenant Commander (D) W E A Simpson and Mr J R Moore L D S of Cape Town (1932) and by Surgeon Lieutenant Commander (D) H M V Barnes R N and Mr Moore (1937)

Unfortunately I had not the benefit of Mr Moore's assistance and had only S B A Terrett of H M S *Acheron* to assist me My thanks are due to him in giving up all his spare time on the voyage to the island in learning the intricacies of dental charting

Arriving at Tristan da Cunha on the afternoon of 27th October 1952 no time was lost in landing at Big Beach where our party was met by Mr Hugh Elliott the retiring Administrator who was taking passage to Cape Town in H M S *Artaeon* Mr Elliott had kindly arranged with Dr W A Ritchie Fallon the Medical Officer of the island for a room in the small hospital to be placed at my disposal but as it the time of landing the Medical Officer was completing a serious emergency operation other quarters were placed at my disposal

The general habits characteristics and dietary of the community appear to have undergone some change in the last fifteen years and may with advantage be briefly mentioned here They have now learned to work for money instead of for themselves although of course it is at their old trade of fishing They still fish on their own behalf and keep their potato patches going However it is no longer possible to exchange by barter the model boats previously obtain able for a pair of old trousers now cost £2 The money is mainly spent in the Canteen run on behalf by the Tristan Development Company now fishing extensively in the area for crawfish which find a ready market in the United States Reference to Table III showing the items bought per week by the islanders will show that their basic diet of fish and potatoes is now considerably augmented by commodities not previously available in steady supply The M V *Tristania* makes a round trip about every two months between the island and Cape Town

Traditional songs and dances are now less popular with the younger people and few of them know by heart the steps and ceremony attributed to their island dances The accordion player now over 63 has found no one to take his place and is being superseded by the portable gramophone The dress of the islander remains much the same and is comparable to that worn say in the Shetlands The girls however wear a poke bonnet and all islanders wear

[illegible] with the assistance [illegible] which [illegible] the cottages how built and [illegible] and the [illegible] must be repaired [illegible] the present form [illegible] the [illegible] and the [illegible] The school age is now [illegible] and although not compulsory [illegible] attend and are members of the Girl Guides or Brownie or Sea Cadet Unit

To facilitate comparison with earlier records it was decided to adhere to the convenient and fairly comprehensive recording system used in the previous surveys It is however felt that it would give a more precise answer if in the adult age groups the percentage of teeth that were expressed as a percentage of 32 and not of the number of teeth examined

The dental examination revealed quite a number of cases of hypoplasia which seems to be confined to the upper incisors Among the older islanders marked attrition was seen This condition seems to be more marked in the men than the women and it may be that in the men working from beaches of volcanic origin and eating out of doors this has had an effect upon the degree of attrition seen There is little difference in the diet of the men and women but the incidence of caries is less in the males than the females The only difference that could be found in the diet is that the men when on fishing expeditions to inaccessible Island and Nightingale Island and round Inaccessible Island kill and eat numbers of birds Thus adding a high protein factor to their diet

Retained second deciduous molars were found in [illegible] islanders bearing the name of Green and 7 men but no women were noted as showing this condition Only two males of different names were seen to have this condition but only a few individual women In most cases it was almost certain that the second premolars although absent from the arch were present and unerupted

Some 38 people were found to have third molars missing from the arch and again it is considered that they were unerupted In common with third molars a curious condition was noticed particularly with reference to the upper right molar although sometimes it on both sides It appeared that the teeth were impacted and had not erupted but that the distal occlusal portion of the crown had been [illegible] bare and that a [illegible] of fine bone and malposition had been extensively attacked by caries No patients showing this condition had ever had any pain and were mostly unaware that the teeth were there

With regard to the incidence of caries in the 1 5 age group the following examples will be of interest

Name	Age	Teeth examined	Teeth carious
Green Joseph	5	20	11
Green Kenneth	5	18	5
Green Malcolm	1 3/12	8	8
Green Terence	1 2/12	8	8
Glass Ursula	4	20	14
Swain Barney	4	20	10
Rogers Norah	5	20	9

Case 1

1. [illegible] old. A [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] census of manufactures [illegible] the [illegible] and [illegible] [illegible] [illegible]

Table III [illegible] some 53 families. [illegible] family and there is no doubt [illegible] richer than others would have [illegible] higher proportion of the [illegible]. Whether [illegible] their buying to the

TABLE IV [illegible]

Year	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	% [illegible]
1932	[illegible]	[illegible]	[illegible]	Nil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	198	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 17	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	1	0 217 (0 196)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	1	Nil (0 122)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	[illegible]	0 242 (0 16)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	Nil
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 735 (1 63)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] (1 421)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] (1 91)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Nil	[illegible]	1	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1932	[illegible]	[illegible]	[illegible]	82	[illegible] 46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1937	[illegible]	1	68	26	3 9	Nil	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	36–85	[illegible]	[illegible]	66	12 [illegible]	Nil	[illegible]	[illegible]	[illegible]	[illegible]

Figures [illegible] the percentage [illegible] groups had 32 teeth

foodstuffs such as sugar and flour it is impossible to say. Had the [illegible] for the Accountant on the Island for the Trans-Antarctic Expedition Company was prepared to attempt a more accurate return of the position in Tristan which would have been of much value. Sadly it to [illegible] the crew of H.M.S. *Atlantic Isle* and the Tristan Development Company [illegible] a higher proportion of the foods normally available to refugee communities [illegible] from available to the Islanders and it is held that although the lower diet of fish and potatoes is still the mainstay the addition of the above items probably played its part in the marked change in the incidence of illness which this survey has revealed.

It may be suggested to the Colonial Office and Ministry of Health that I consider that the duration of the visit of medical officers remaining there would require some four months at least and that the Medical Officer of the Island with whom I had an association in the married institutions of Christ's Church he expected to deal with a large bulk of the dental work. The latter part of my stay was [illegible] by the assistance of Dr. Ritchie Fallon and the dental [illegible] such as these showed a success formation in the younger refugees.

I cannot close this report without recording my thanks to the Administrator for his great kindness and interest and to Dr. and Mrs. W. A. Ritchie Fallon for all their help and information and their personal hospitality while staying on the Island.

This report is published by permission of the Medical Director-General of the Navy.

REFERENCES

Bantock and Martin (1937) *Lancet* **i**, 63.
Swiss Antarctic Meteorological Expedition (1938) *Ibid.* **i**, 1388.

A CASE OF GLANDULAR FEVER WITH CONVULSIONS

BY

Surgeon Lieutenant-Commander J. D. STRIDE, R.N.

THE neurological complications of infectious mononucleosis have been emphasized in recent years by many authorities notably Lely (1940).

The following case is of interest because of the unusual mode of onset of the disease.

An Air Artificer aged 22 [illegible] history of [illegible] the best of health until the beginning of June 1942. He [illegible] until mid-afternoon while walking for a short distance he felt [illegible] the ground and it is [illegible] rose for a period estimated by himself to be two or three minutes. He felt [illegible] these symptoms but have any convulsive movements. He reported sick the same day and the medical officer noted the

	63 per cent
	25 per cent
	3 per cent
	3 per cent
	1 per cent

symptom [illegible] ation of the article In the 5th case E.E.G showed [illegible] central area eight months after the initial illness. He ref[illegible]ibed (dilantin) and two weeks later had a typical Jackson [illegible] arm

In the [illegible] fluid showed the well-known La dissociation albumin [illegible] and Barré—a greatly raised protein content with a norm[illegible] lymphocytic mononuclear cells but the flaccid paralysis and paraesthesiæ of [illegible] were absent

In America the [illegible] of infectious glandular fever seen in college students is an insidious onset of fatigue and depression without much enlargement of lymph glands

Summary.—A case of infectious mononucleosis with a major epileptiform convulsion and complete recovery is described

Short summaries of similar cases are given

Infectious mononucleosis should be included in the differential diagnosis of any acute neurologic disorder and in cases of fatigue and depression of obscure origin

REFERENCES

Bickel W. A. (1942) *American Journal of Medical Sciences* **224** 667
Holgopol and Husson (1949) *Archives of Internal Medicine* **83** 179
Levitin and Dameshek (1931) *New England Journal of Medicine* **205** 1238
Reid (1948) *American Journal of Medicine* **4** 194
Rellerson H. W. and Smith J. (1951) Modern Practice in Infectious Fevers 944
Tidy (1950) *Postgraduate Medical Journal* **26** 9

Correspondence

Dear Sir

With reference to pages 170 and 171 of the Summer Number 1953 of the Journal of the Royal Naval Medical Service I must congratulate your [illegible] correspondents who have conferred a great benefit upon our whole Service Community by revealing that Thalassophobia means a fear of the sea. Many of us now know at long last what is wrong with us and I am [illegible]ly comforted by the realization that I myself have been Thalassophobic for a number of years

I am Sir
Your obedient Servant,
Jack L. S. Coulter
Surgeon Commander R.N.

P.S.—Forgive me if I ramble, but I also suffer from chronic Bardolphobia (Dread of Shakespeare), referring specifically to sedentary topography

Reviews

[illegible]

PARODI [illegible] By L. Walford Fish C.B.E. M.D. [illegible] Dental Surgeon St. Mary's Hospital [illegible] Eyre & Spottiswoode. Price 30s. 0d.

In the [illegible] this book Dr. Fish [illegible] the [illegible] text-book [illegible] at the end of each chapter [illegible] useful.

Chapter IX [illegible] with the appendix [illegible] all Dr. Fish's [illegible]

The [illegible] the accompanying text explaining the photomicrographs [illegible]

[illegible] numerous [illegible] worthy of [illegible]

[illegible] is a pamphlet [illegible] Surgeon [illegible] Manchester Royal Infirmary [illegible] Hospital [illegible] University of Manchester [illegible] Department of [illegible] Manchester 1953 [illegible]

[illegible]

[illegible] to the wrong page and omitting [illegible] Closing [illegible] after op cit

The [illegible] of the book is that it [illegible] Medical [illegible] in Africa [illegible] Naval Medical Service [illegible] specialized [illegible] those interested in [illegible] drug and [illegible] fast

A Guide to Human Parasitology. By H B Blacklock and J W S Southwell. Revised by C H Hindle, *O B E*. M D D T M. Fifth Edition 1953 Pp viii + 228. Illustrations 120 and 3 Coloured plates London H K Lewis & Co Ltd Price 25s 6d

This book contains in convenient space all that one needs to know regarding the life-cycle, pathogenicity and clinical history of those protozoan and metazoan parasites that live in the human body and any preventative measures that may help to break the cycle There are also sections devoted to the methods of examining and preserving specimens

It combines easy reading with convenience as a reference book and the illustrations both line drawings and coloured plates are admirable Of particular interest are those illustrating the life histories of the parasitic worms and here is a useful hint for students who sometimes find it difficult to remember which of two organisms find it in its advantage to have four distinct larval forms and three different species of hosts!

Changes from the fourth edition are not extensive but description of a few rather obscure species has been added and more attention has been paid to the intestinal flagellates Trichomonas and Chilomastix and the internal cycle of the malaria parasites is described for the first time

Clinical Psychiatry. By Eric Strauss M D Glasgow M R C P D P M London F R C Psych First Ward Duty Gartnavel Royal Hospital Oxford 1953 Pp xv + 385 London Kegan Paul, Trench, Trubner & Co Ltd Price 36s 6d

Among the many text-books on psychiatry this one stands apart It has been specially written to help doctors to recognize and treat early psychiatric illness whether in practice, out-patient clinic, casualty room or seen in the general hospital wards and out-patient department

Busy clinical practitioners in the specialties other than psychiatry will find it a valuable starting point for those wishing to train in psychiatry The whole field of clinical psychiatry has been encompassed briefly in the 385 pages by the consistent theory of the unconscious and connected subdivision into the id, ego and super-ego and with a bias which is in the main Freudian

The section on psychotherapy is helpful and practical

Psychosomatic Disorders in General Practice. By W Linden Sutherland M D B S M R C P Physician in Psychological Medicine The Royal Southern Hospital, Queen Mary Hospital for the East End, London and Barnet Wood Hospital, Thrustington St Albans Hospital Group Consultant Psychiatrist The London County Council Sch Hlth Service 1953 Pp 248 London Christopher Johnson Price 21s 0d

The author of this book has set out to present in convenient form to the human the subject of psychosomatic medicine It should introduce the common psychiatric problems and problems arising from them to show the type of course which such conditions are assumed to run

The McNaughten Rules are discussed at some length and with clarity Despite the fact that they have not been modified by the Courts they seem to be applied in such a way as to [illegible] the [illegible] of the psychopath who [illegible] indeed may be [illegible]

BOOKS RECEIVED

[illegible] MEDICAL AND BIOLOGICAL [illegible] ... Hamilton C. [illegible] ... University of California Press, Berkeley and Los Angeles. Price $1 [illegible]

We acknowledge with thanks receipt of the following publications

[illegible] ... Military Surgeon ... [illegible]

News of the Service

OBITUARY

[illegible] W. [illegible] HAWKINS, R.N. (Retd.) died on the [illegible]. Born on the 2[illegible] September, 1877, he qualified in 1904 and entered the R.N. Medical Service [illegible] 23rd May, 1904. He was promoted to [illegible] ... placed on the Retired List [illegible] ... Surgeon Captain.

During the [illegible] World War, Surgeon Captain Hawkins served in H.M. Ships [illegible] ... [illegible] Medical [illegible] Officer at [illegible].

Surgeon Captain A. [illegible] BEAN, R.N. (Retd.) died on the 25th January, 1954. He was born on the [illegible] ... 1890 ... entered the R.N. Medical Service as a Surgeon [illegible] ... Staff Surgeon in 1908, Surgeon Commander 1911 [illegible] placed on the Retired List [illegible] 1923.

During World War I Surgeon Captain Bean served in H.M.S. *Bulwark* [illegible] ... [illegible] ... Medical Department, Admiralty, from October 1939 until January 1945 when he [illegible] to the Retired List.

Surgeon Cap[illegible] S[illegible] G GODWIN R N 1801 [illegible] [illegible] 1853 Born on the [illegible] 1888 he qualified in [illegible] [illegible] R N M[illegible] Service as a S[illegible] [illegible] on 24th November 1911 [illegible] Lieutenant [illegible] [illegible] 1917 Surgeon C[illegible] Captain 1934 [illegible] [illegible] Royal Naval Reserve [illegible] Decorated R N [illegible]

During the Great War Surgeon Captain [illegible] H M [illegible] and *Clematis* and Ewa in the [illegible] Flotilla R N V [illegible] H M [illegible] In December 1918 he [illegible] to the [illegible] [illegible] services in the prosecution [illegible] War. During World War II [illegible] *Eight Collingwood Road* and H M S R N Barracks Chatham [illegible]

Surgeon Captain [illegible] MAHAN R N (Ret[illegible]) [illegible] [illegible] 4th February 1870 he qualified in 1891 [illegible] [illegible] Surgeon R N [illegible] November 1894. He was promoted [illegible] Commander in 1912 and was placed in the Retired List [illegible] Surgeon Captain.

During World War I Surgeon Captain Mahan served [illegible] H M [illegible] *Infle*[illegible] and at R N Hospital Chatham.

PROMOTIONS

[illegible] Surgeon Rear Admiral (Retired) [illegible] C Bruce J M C[illegible] W[illegible] [illegible]
[illegible] A Lamb [illegible] A I Mackenzie
[illegible] Surgeon Lieutenant Commander (D) [illegible] C B Wren

TRANSFERS TO PERMANENT LIST

[illegible] Lieutenant J A B Harrison R N

ENTRIES FOR SHORT SERVICE COMMISSION

M [illegible] Bale M B B Ch B N J Colyer M B Ch B G Conner M B Ch B M [illegible] [illegible] B S I Hall M B B Ch M R C S L R C P J B Kemp M B Ch B [illegible] J W Lambert M B B Ch M R C S L R C P E B Mathias L D S A M[illegible] L D S J H C Ross M R C S L R C P J H Stewart M B B Ch

RETIREMENTS

Surgeon Captains [illegible] C Day J M Sloane Surgeon Commander H N Clarke [illegible] Lieutenant-Commander R R B Baxendine

WARDMASTER OFFICERS

PROMOTIONS

[illegible] Chief Coloured Wardmaster H E Weller S G Albert

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTIONS

[illegible] Principal Matron Superintending Sister Miss B Nockolds *R R C*
[illegible] Superintending Sister Senior Nursing Sister Miss N W Booth *I R h C*

ADMIRALTY FLEET ORDERS

1818 —Medical—Monocular Personnel Regulating Branch and Sick Berth Engaged on Mental Nursing Duties—Supply of Unsplinterable Glass Spectacles.

1819 —Ratings—Sick Berth Ratings—Institution of Register of Laboratory Assistants—Reports

1877 —Dental Treatment—Entitlement Facilities, Records Returns, etc and Scale of Fees

1883 —Hospitals and R N Medical Establishments—Scale of Charges for Subsistence and Hospital Treatment

1885 Medical N.A.A.F.I. Canteen Staff Medical Examination Medical and Dental Treatment Certificates of Employment—Medical Notations

1965 Establishments—R N Medical School and R N Physiological Laboratory Alverstoke

1986 —Reserves—R N V R General—Pulheems System of Medical Classification

1988 —Surgeons and Agents

2005 Naval Stores—Dental Tube Brushes New Type—Introduction

2067 Hirst Certificates—Procedure for Issue

2131 Admiralty Committees The Royal Naval Personnel Research Committee—Purpose and Organization

2152 Medical Organization for Action

2153 Medical—Transport in the United Kingdom—Railway and Ambulance

2159 Medical History Sheets R N and W R N S Ratings serving in H M S *President*

2182 Victualling Stores—Clothing—Shirts Hospital Service Replacement by Shirts Action Working Dress

2183 Victualling Stores Clothing Denim Operating Jackets

2210 Workpeople Medical Civilian M T Drivers Eyesight Tests

2238 —Surgeons and Agents

2242 Medical Joint Services and Factory Department Committee on Occupational Health—REPORTS

2369 Medical Documentation—Instructions

2390 —Officers Medical—Introduction of Specialist Appointments in Urology and Venereology

2414 Medical Stores—Service Afloat X-ray Apparatus REPORTS

2515 —Leave—Sick Leave

2528 —Surgeons and Agents

2533 —Medical Suppressive Treatment of Malaria

2610 Medical Novox Resuscitation Apparatus—Adjustment and Use

2620 Surgeons and Agents

2626 —Medical Material Relating to Biopsies on R A F Patients

2627 —Medical Sickness Rating's Risk and Expense Form (B 25)

2650 —Medical Stores—Gas Cylinders for Medical Purposes—Change of Colour

2690.—Medical—N A A F I —Canteen Staff—Medical Examination—Medical and Dental Treatment—Certificate of Employment—Medical Notatinus

2714.—Medical Stores—Fitting of Replacement X-ray Tubes on Units Fitted with Millilompere Pre-Selectors

2765 Medical —Directions in Cases of Prolonged Treatment

2766 —Medical—Eyesight—Spectacles- Supply Repair and Replacements to R N , R M , and W R N S Personnel Home and Abroad Admiralty Civilians Abroad and Wives and Families of Naval and Civilian Personnel Abroad Arrangements

2775.—Surgeons and Agents

2779 —Medical Officer Cases Suffering from Tuberculosis-

2930 Medical Officers Admission to Civil Hospitals Registered under the National Health Scheme

2932 —Pay and Allowances—Medical and Dental Officers—Full Pay and Allowances—Revised Rates

2974 —Forms—B Med 4—Record of Nursing Training and Ward Experience—Joint Services Book —Introduction and Abolition of Form M.92

Notice

Our attention has been drawn to the use of the word vaseline which occurred on line 6 page 117 in the Spring 1953 issue

Messrs Chesebrough Manufacturing Co Ltd have pointed out that they are the proprietors of the registered trade mark Vaseline which distinguishes a product of their manufacture

We apologize for any infringement of the trade mark regulations

Notice

The Editor in[illegible] travel personal exp[illegible] medical service w[illegible] stations. Notices [illegible]

All articles [illegible] MEDICAL SERVICE will become the property of the Journal [illegible] unless the author declares when sending the [illegible] to himself. All articles should be sent in duplicate.

The Harvard system should be employed [illegible] references being arranged in alphabetical [illegible] contribution thus: Smith T. G. (1936) [illegible] 27 [illegible] a reference to a publication should be cited [illegible] date thus: Smith (1938a) believed this to be due [illegible]

All communications should reach the Editor on or before the first of the month preceding the date of issue. Unless clearly written they should be typed in order to avoid mistakes and they should be addressed to the Editor, JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, Manckton House, Alverstoke, Gosport, Hants.

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